Title
Compact Fluorescent Lamps Market Effects Final Report. Appendix A: In-Home Audit Findings

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Publication Date
2010-02-01

Appendix A

In-Home Audit Findings

Appendix A: In-Home Lighting Audits

1. TASK SUMMARY

This appendix summarizes the results of the CFL In-Home Lighting Audits conducted as part of the CFL Market Effects evaluation. The In-Home Lighting Audits were conducted in PG&E, SCE, and SDG&E service areas in California, as well as in homes throughout the Comparison Area of Georgia, Kansas, and Pennsylvania. The purpose of these audits was to determine the saturation of CFLs in California and the Comparison Area.

Findings from the In-Home Audits include:

- Self-reports about the presence or absence of CFLs in customers' homes are generally reliable. Self-reports about the *number* of CFLs installed in homes, however, are not accurate.
- The saturation of CFLs is significantly higher in California than in the Comparison Area. For example, 33% of the medium screw based lamps in California contain CFLs, compared to 24% in the Comparison Area.
- The average California home had a higher number of CFLs (2.5) in storage than the average home in the Comparison Area (1.5); however, the average California home had fewer incandescent bulbs in storage (0.6) compared to the average Comparison Area home (2.6).
- Very few 3-way, and even fewer dimmable, CFLs are installed in homes in California and the Comparison Area.
- More recently purchased MSBLs of all types—both CFLs and incandescents—were installed in the Comparison Area than in California.

2. METHODOLOGY

2.1 Survey Sample

The CFL Market Effects Team recruited In-Home Lighting Audit participants from the CFL User (telephone) Survey respondents. The goal was to complete 70 In-Home Lighting Audits per state to meet 90% confidence and 10% precision levels.[1] In California, the sample was stratified by IOU service territory. Consistent with the breakdown of California respondents for the CFL User Survey, the team aimed to conduct 40% of the audits in PG&E's service area, 40% in SCE's service area, and 20% in SDG&E's service area.

In order to develop In-Home Lighting Audit samples that were as representative of the comparison state population distributions as possible, we stratified potential lighting audit participants based on data about state population distribution from the U.S. Census Bureau. The team established county-specific participation targets to roughly mimic the population

[1] These levels are based on a binomial assumption (50% proportion) regarding the stated vs. actual presence of CFLs in respondent households.

distributions, with a focus on the five most populous counties in each state.[2] Table A-1 shows the county-level population distribution and the targeted number of In-Home Lighting Audits by county in each comparison state.

Table A-1. Distribution of Population and Target Surveys by Comparison State

Georgia			Kansas			Pennsylvania		
County	% of State Population	Number of Site Visits Targeted	County	% of State Population	Number of Site Visits Targeted	County	% of State Population	Number of Site Visits Targeted
Fulton	10%	20	Sedgwick	17%	24	Philadelphia	12%	23
DeKalb	8%	16	Johnson	17%	24	Allegheny	10%	19
Cobb	7%	14	Shawnee	6%	9	Montgomery	6%	11
Gwinnett	7%	14	Wyandotte	6%	8	Bucks	5%	9
Clayton	3%	6	Douglas	4%	5	Delaware	5%	8
Total	35%	70		50%	70		38%	70

Due to low interest among telephone survey respondents in participating in the In-Home Lighting Audit, as well as to difficulties in scheduling the audits and high audit cancelation rates, the team fell slightly short of the 70 homes per state target for two states in the Comparison Area. The overall precision level for the Comparison Area, at the 90% confidence level, was approximately 6%.

In California, in contrast, we exceeded the 70-home goal. Table A-2 shows the number of completed In-Home Lighting Audits by state.

Table A-2. Completed In-Home Lighting Audits

State	Completed Audits
California	76
Georgia	63
Kansas	70
Pennsylvania	60
Total	269

2.2 Survey Instrument

The In-Home Lighting Audit consisted of two components: a short battery of questions for participants and a data collection form in which the surveyor entered information about the number, location, and type of medium screw-base (MSB) lamps and sockets in the home.[3]

[2] Project resources (budget, staff travel time) necessitated limiting the number of counties included in the sample.

[3] The In-Home Lighting Audit survey and data collection forms are included in Appendix E of the *CFL Market Effects Interim Report* (May 15,2009).

On average, the In-Home Lighting Audit took 20 minutes to complete. All participants received $50 gift cards upon completion of the audit.

2.3 Weighting the Data

Data collected through the In-Home Lighting Audit was weighted in two ways. First, as was done with the CFL User Survey, all data were weighted to demographically represent households in the California IOUs' service areas—that is, to correct for differences between the demographics of the In-Home Audit participants and the demographics of households in California's IOU service areas. This weighting scheme was based on tenancy (owner/renter status) and the educational status of respondents, variables which help to predict lighting purchase patterns.[4, 5] The result of the weighting is a construct that replicates the demographics and the number of households in the California IOUs' service areas.

Second, the In-Home Lighting Audit data were weighted to reflect the percentage of the population that has at least one CFL installed in their primary residence. The rationale for this weighting is described in the "CFL Penetration and Saturation" section below.

2.4 Caveats to the In-Home Lighting Audit Results

The CFL Market Effects Team recognizes that the In-Home Lighting Audit results have a few limitations. First, a limited number of lighting audits were conducted at homes without any CFLs. The team corrected for the limited sample of homes without CFLs through the weighting scheme described elsewhere in this section.

Second, in order to be as efficient with project resources as possible, the team opted to collect information only about MSB lamps and sockets through the In-Home Lighting Audit; the study did not collect information about pin-based and small screw-based lamps or sockets. The CFL Market Effects Team made this decision based on the fact that the majority of residential sockets are MSB, and MSB sockets account for the highest percentage of CFLs—and CFL potential— in homes. In fact, according to the 2008 CPUC Residential Retrofit Upstream Lighting verification results of over 600 homes in California,[6] 69% of all residential sockets in are MSB, 19% are pin-base (typically tubular fluorescent), 10% are small screw-base, and 2% are other/unknown. This same study found that CFLs are most prevalent in MSB sockets.

Finally, it was not possible for the CFL User (telephone) Survey and the In-Home Lighting Audit to be conducted concurrently since the telephone survey was used to recruit lighting audit sites. It is possible that the relatively small gap in timing (the telephone survey was conducted in

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4 This pattern has been noted in the Market Progress and Evaluation Report (MPER) for the 2007 Massachusetts ENERGY STAR Lighting Program, Final Report. Submitted to Cape Light Compact, Massachusetts Electric Company, Nantucket Electric Company, NSTAR Electric Company, Western Massachusetts Electric Company, and Unitil by Nexus Market Research, Inc., RLW Analytics, Inc., and Dorothy Conant. July 1, 2008.

5 The reference for weighting was the 2003 California Energy Commission's Consortium RASS database. See: http://websafe.kemainc.com/RASSWEB/DesktopDefault.aspx?tabindex=0&tabid=1, Accessed December 3, 2008. The use of the RASS database allowed us to represent demographic characteristics of the California IOU service areas rather than of the entire state. More information on the demographic weighting used can be found in Section 4.2 of the Compact Fluorescent Lamps Market Effects Interim Report.

6 Report published in December 2009.

October-November 2008 and the lighting audits were conducted in December 2008) may account for some of the discrepancy between the number of CFLs phone survey respondents reported and the actual number of CFLs that were found in their homes during the on-site audits.

3. FINDINGS

3.1 Comparison of Self-Reported and Verified CFLs

Throughout California and the Comparison Area, the majority of respondents were able to accurately state whether they had one or more CFLs in their homes. Table A-3 shows the percentage of correct and incorrect responses for California and the Comparison Area, while Table A-4 and Table A-5 provide the split between "false positives" and "false negatives" for California and the Comparison Area, respectively. The differences between correct (and incorrect) percentages for California and the Comparison Area are not statistically significant.

Table A-3. Correct Responses About Presence of at Least One CFL in the Home [a]

	Correct	Incorrect
California (n=73)	93%	7%
Comparison Area (n=177)	87%	13%

[a] Don't know responses to the CFL User (telephone) Survey have been removed from the calculations.

* Results between California and the Comparison Area are significantly different at the 90% confidence level.

Table A-4. Presence of CFLs from Telephone Survey vs. In-Home Audit for California

	Presence of CFLs	In-Home Audit	
		One or more CFLs	No CFLs
Telephone Survey [a]	One or more CFLs	84%	1%
	No CFLs	6%	10%

[a] Don't know responses have been removed from the calculations.

[b] Values do not add to 100% due to rounding.

Table A-5. Presence of CFLs from Telephone Survey vs. In-Home Audit for Comparison Area

	Presence of CFLs	In-Home Audit	
		One or more CFLs	No CFLs
Telephone Survey [a]	One or more CFLs	66% *	6% *
	No CFLs	7% *	21% *

[a] Don't know responses have been removed from the calculations.

* Results between California and the Comparison Area are significantly different at the 90% confidence level.

Respondents' self-reported estimates of the numbers of CFLs in their homes, however, were generally not accurate. Table A- 6 shows the percentage of respondents who accurately, under-, and over-reported the number of CFLs installed in their homes. Table A- 6 also shows the (absolute value of the) average difference between the number of CFLs respondents estimated they had in their homes (through the telephone survey) and the number of CFLs actually found in their homes during the In-Home Lighting Audit.

Not only were there were consistently statistically significant differences between the estimated and actual numbers of CFLs, but there was also no consistent direction of misreporting. As is indicated in Table A- 6, respondents in California and the Comparison Area on average under-reported the number of CFLs in their homes; however, there were a number of respondents in both areas who over-reported as well.

Table A- 6. Differences between Self-Reported Estimates and Actual Numbers of CFLs Installed in the Home

	% of Telephone Respondents [a]			Average % Greater (or Fewer) CFLs Found During In-Home Audit than Reported from Telephone Survey [b]
	Accurately Reporting the *Number* of CFLs	Under-reporting the Number of CFLs	Over-reporting the Number of CFLs	
California (n=65)	18%	56%	26%	80%
Comparison Area (n=129)	29% *	40% *	31% *	71%

[a] Don't know responses have been removed from the calculations.

[b] This column is calculated from the *absolute value* of the difference between self-reported CFL counts and audited CFL counts.

* Results between California and the Comparison Area are significantly different at the 90% confidence level.

A more specific breakdown of the respondents' accuracy in estimating the number of CFLs in their homes is provided by state in Table A-7. Because more respondents in the Comparison Area had zero CFLs and accurately reported that fact, Table A-7 shows that more respondents in the Comparison Area than in California were able to accurately estimate the number of CFLs installed in their homes in the +/-0, +/-3, and +/-5 bulb accuracy bands.

As shown in Figure A- 1, homes with more than 10 CFLs installed tend to have a higher dispersion, or variance between the self-reported and the actual number of CFLs.

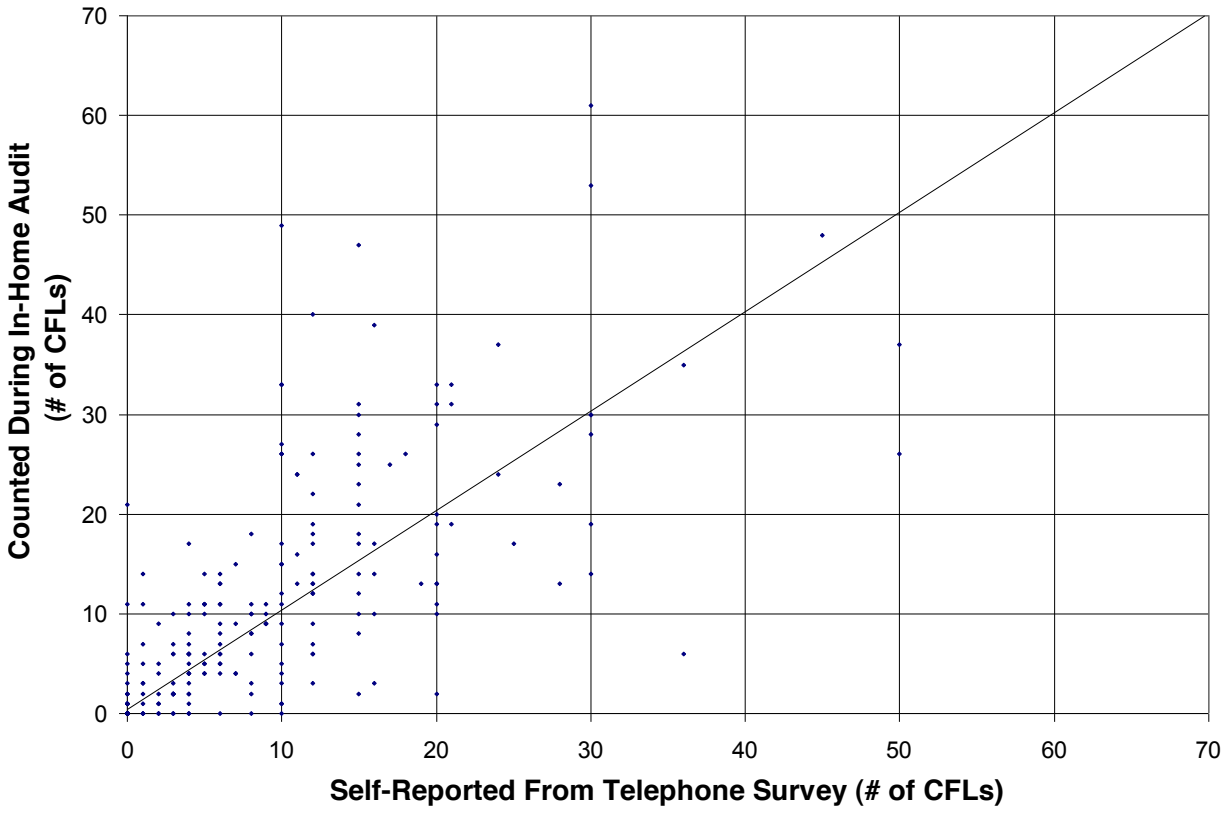
Table A-7. **Respondents' Accuracy in Self**-Reporting the Number of CFLs in Their Homes

State/Region	Percentage of Respondents Accurately Reporting the Number of CFLs within Specified Confidence Band [a]			
	Confidence Band = 0 CFLs	Confidence Band = 3 CFLs	Confidence Band = 5 CFLs	Confidence Band = 10 CFLs
California (n=73)	18%	49%	60%	86%
Comparison Area (n=177)	29% *	63% *	70%	85%

[a] Don't know responses have been removed from the calculations.

* Results between California and the Comparison Area are significantly different at the 90% confidence level.

Figure A- 1. Comparison of Self-Reported vs. Installed CFLs



3.2 CFL Penetration and Saturation

As shown in Table A- 8, the results of the CFL User Survey (all waves) revealed that 79% of California homes had at least one CFL installed, compared to only 66% in the Comparison Area.[7] This difference is statistically significant.

Table A- 8. Percentage of Respondents with At Least One CFL Installed

	CFL User Survey—All Respondents [a]	CFL User Survey—In-Home Audit Subset [a]	In-Home Lighting Audit
California	79%	87%	87%
Comparison Area	66% *	69% *	68% *

[a] Don't know responses have been removed from the calculations.

* Results between California and the Comparison Area are significantly different at the 90% confidence level.

Because a statistically significant higher percentage of In-Home Lighting Audit participants had at least one CFL than did CFL User Survey respondents (and our analysis showed that CFL User Survey respondents were generally reliable when reporting the presence of at least one CFL), it was apparent that CFL User Survey respondents who had at least one CFL were more likely to agree to participate in the In-Home Lighting Audit than were CFL User Survey respondents who had no CFLs. To correct for this In-Home Lighting Audit self-selection bias, the lighting audit data were weighted to reflect the actual proportion of CFL users in a given state as determined from the CFL User Survey data. All results described in the remainder of this section incorporate this weighting scheme.[8]

To determine the saturation of CFLs in California and Comparison Area homes, the CFL Market Effects Team divided the number of CFLs installed in each audited home by the number of MSB sockets found in the home, and then averaged the individual homes' values for each state. We performed comparable calculations to derive the saturation of other (non-CFL) types of MSB lamps and the percentage of all MSB sockets that are empty in each state.

The results showed that, on average, Californian households have a statistically significant greater saturation of CFLs (36%) than do households in the Comparison Area (22%). Table A- 9 shows the average numbers and saturations of CFLs, other MSB lamps, and empty sockets for California and the Comparison Area.

[7] These findings were taken from the CFL User (telephone) Survey because that effort included more respondents than did the In-Home Lighting Audit. Furthermore, the CFL User Survey did not have the self-selection bias (toward having one or more CFLs installed in the home) that existed for the In-Home Lighting Audit.

[8] Note that this is in addition to the demographic weighting described earlier.

Table A- 9. CFL, Non-CFL Medium Screw-Base Lamp and Empty Socket Counts and Saturations[9]

State/Region		Total Medium Screw-Base Sockets	CFLs Installed	Non-CFL MSBLs Installed	Empty Sockets
California (n=76)	Number	33.0	11.6	20.1	1.3
	Saturation	100%	35%	61%	4%
Comparison Area (n=193)	Number	35.2	8.3*	25.8*	1.1
	Saturation	100%	24%*	73%*	3%*

* Results between California and the Comparison Area are significantly different at the 90% confidence level.

As shown in Table A- 10, the CFL Market Effects Team found very few specialty CFLs installed in any homes either in California or in the Comparison Area. While the Team observed 3-way CFLs in a small percentage of MSB sockets in California and the Comparison Area, nearly no dimmable CFLs were found installed in either region. The differences between the breakdowns of nonspecialty versus dimmable and 3-way CFLs in California and the Comparison Area are not statistically different.

Table A- 10. Percentage of Nonspecialty, Dimmable, and 3-Way CFLs Installed

State/Region	Total Number of CFLs Installed	% Non-Specialty CFLs	% Dimmable CFLs	% 3-Way CFLs
California (n=67)	11.6	98.8%	0.0%	1.2%
Comparison Area (n= 139)	8.3*	97.3%	<0.1%	2.6%

* Results between California and the Comparison Area are significantly different at the 90% confidence level.

In addition to having higher CFL saturations than Comparison Area homes, California homes also have statistically significant greater quantities of non-specialty CFLs in storage than do homes in the Comparison Area (Table A- 11). California homes also have statistically significant fewer incandescents (other, non-CFL MSBLs) in storage than do homes in the Comparison Area.

[9] These results are from the single wave of in-home surveys conducted for the CFL Market Effects evaluation. These results will be integrated with results from subsequent waves of in-homes surveys for presentation and use in the Final CFL Market Effects Report.

Table A- 11. Number of CFLs and Incandescents in Storage

State/Region	Non-Specialty CFLs	Dimmable CFLs	3-Way CFLs	Other (non-CFL) MSBLs
California (n=76	2.6	0.0	0.0	0.4
Comparison Area (n=193)	1.5*	0.0	<0.1	2.6*

* Results between California and the Comparison Area are significantly different at the 90% confidence level.

3.3 Comparison of Recently-Purchased and Installed CFLs

Because the self-reported estimate of CFL purchases is a critical component of the analysis, the in-home survey (conducted as part of the In-Home Lighting Audit) included a question about the number of CFLs the respondent purchased in the past three months. This question was identical to a question asked during the telephone survey.[10] Respondents were then asked whether these bulbs were installed and to identify them to the auditor.

On average, respondents to the telephone survey who had also participated in the In-Home Lighting Audit slightly over-reported the number of CFLs purchased during the previous three months (Table A- 12). Specifically, during the telephone survey In-Home respondents with recent purchases said they had purchased an average of six CFLs in the previous three months, whereas these same respondents said they had recently purchased an average of five CFLs during the in-home survey.[11]

Similarly, when they participated in the telephone survey, In-Home Audit respondents tended to overestimate the number of recently-purchased CFLs that were installed (compared to those that were reported and identified onsite): during the audit, surveyors found an average of 3.2 of the recently purchased CFLs installed, as opposed to the 3.7 CFLs reported in the phone survey. This difference is not statistically significant at the 90% confidence level.

[10] Note the respondent was not "aided" with the answer he or she provided during the telephone survey.

[11] The recent CFL purchase numbers have not been weighted because the sample size is too small per state to realistically weight up to the California population, and because consolidating the four states into one area makes weighting unrealistic.

Table A- 12. Recently-Purchased and Installed CFLs

State/Region	Mean # CFLs Purchased in Past 3 Months		Mean # CFLs Purchased in Past 3 Months and Installed		
	Phone Survey Responses (In-Home Audit Subset)	In-Home Audit Responses	Phone Survey Responses (In-Home Audit Subset)	In-Home Audit Responses	Counted During In-Home Audit
All Onsite Participants (n=38)	6.0*	5.0	3.7	3.2	3.2

[b] Mean calculations include only those homes that had reportedly purchased at least one CFL in the past three months.

* Results between Phone and Onsite responses are significantly different at the 90% confidence level.

Because there was a short time lag between the telephone and in-home surveys, in-home respondents were asked about the number of CFLs they had purchased in the three weeks between the fielding of the two surveys. However, only one respondent in our sample reported having purchased CFLs in the previous three weeks, so the discrepancy between the telephone and in-home responses likely could not be explained by the time between the two surveys.

The results, therefore, indicate that telephone survey respondents overestimated the number of recently purchased bulbs compared to the number of bulbs respondents could actually identify on-site. Telephone survey respondents also tended to overestimate the number of recently purchased CFLs that were installed, although this bias was less pronounced. Because the sample size of recently purchasing households was small, only 38 In-Home Audit participants, we are unable to analyze the results by area, and thus cannot say if the over-reporting bias differed by utility service territory or geographic region.

4. State-Level Findings for the Comparison Area

This section summarizes findings from the In-Home Lighting Audit for each of the individual states—Georgia, Kansas, and Pennsylvania—in the Comparison Area. The state-level data are weighted to represent the demographic characteristics of each state.

4.1 Comparison of Self-Reported and Verified CFLs

Throughout the Comparison Area, the majority of respondents were able to accurately state whether they had one or more CFLs in their homes. Table A-13 shows the percentage of correct and incorrect responses for each of the three Comparison Area states, while Tables A-14 through Table A-16 provide the split between "false positives" and "false negatives" for Georgia, Kansas, and Pennsylvania, respectively.

Table A- 13. Correct Responses About Presence of at Least One CFL in the Home [a]

State	Correct	Incorrect
GA (n=55)	86%	14%
KS (n=65)	87%	13%
PA (n=57)	94%	6%

[a] Don't know responses to the CFL User (telephone) Survey have been removed from the calculations.

Table A- 14. Presence of CFLs from Telephone Survey vs. In-Home Audit for Georgia

	Presence of CFLs	In-Home Audit [b]	
		One or more CFLs	No CFLs
Telephone Survey [a]	One or more CFLs	56%	8%
	No CFLs	5%	30%

[a] Don't know responses have been removed from the calculations.

[b] Values may not add to 100% due to rounding.

Table A- 15. Presence of CFLs from Telephone Survey vs. In-Home Audit for Kansas

	Presence of CFLs	In-Home Audit [b]	
		One or more CFLs	No CFLs
Telephone Survey [a]	One or more CFLs	72%	2%
	No CFLs	11%	15%

[a] Don't know responses have been removed from the calculations.

[b] Values may not add to 100% due to rounding.

Table A- 16. Presence of CFLs from Telephone Survey vs. In-Home Audit for Pennsylvania

	Presence of CFLs	In-Home Audit [b]	
		One or more CFLs	No CFLs
Telephone Survey [a]	One or more CFLs	74%	4%
	No CFLs	3%	20%

[a] Don't know responses have been removed from the calculations.

[b] Values may not add to 100% due to rounding.

Respondents' self-reported estimates of the numbers of CFLs in their homes, however, were generally not accurate. Table A-17 shows the percentage of respondents who accurately, under-, and over-reported the number of CFLs installed in their homes. Table A-17 also shows the (absolute value of the) average difference between the number of CFLs respondents estimated

they had in their homes (through the telephone survey) and the number of CFLs actually found in their homes during the In-Home Lighting Audit.

Not only were there were consistently statistically significant differences between the estimated and actual numbers of CFLs, but there was also no consistent direction of misreporting as is indicated in Table A-17.

Table A- 17. Differences between Self-Reported Estimates and Actual Numbers of CFLs Installed in the Home

State	% of Telephone Respondents [a, b]		
	Accurately Reporting the *Number* of CFLs	Under-reporting the Number of CFLs	Over-reporting the Number of CFLs
Georgia (n=40)	35%	35%	31%
Kansas (n=54)	23%	55%	21%
Pennsylvania (n=41)	30%	30%	39%

[a] Don't know responses have been removed from the calculations.

[b] Values may not add to 100% due to rounding.

A more specific breakdown of the respondents' accuracy in estimating the number of CFLs in their homes is provided by state in Table A-18.

Table A- **18. Respondents' Accuracy in Self**-Reporting the Number of CFLs in Their Homes

State	Percentage of Respondents Accurately Reporting the Number of CFLs within Specified Confidence Band [a]			
	Confidence Band = 0 CFLs	Confidence Band = 3 CFLs	Confidence Band = 5 CFLs	Confidence Band = 10 CFLs
Georgia (n=55)	35%	67%	70%	84%
Kansas (n=65)	23%	60%	67%	79%
Pennsylvania (n=57)	30%	64%	71%	86%

[a] Don't know responses have been removed from the calculations.

4.2 CFL Penetration and Saturation

As shown in Table A-19, the results of the current wave of the CFL User Survey revealed that roughly 72% of homes in all three comparison states had at least one CFL installed, whereas the results of the In-Home Lighting Audit revealed that between 63% (Georgia) and 83% (Kansas) of participant homes actually had at least one CFL installed.

Table A-19. Percentage of Respondents with At Least One CFL Installed

	CFL User Survey—All Respondents [a]	CFL User Survey—In-Home Audit Subset [a]	In-Home Lighting Audit
Georgia (n=63)	72%	82%	63%
Kansas (n=70)	73%	65%	83%
Pennsylvania (n=60)	72%	84%	76%

[a] Don't know responses have been removed from the calculations.

Because a statistically significant higher percentage of In-Home Lighting Audit participants had at least one CFL than did CFL User Survey respondents (and our analysis showed that CFL User Survey respondents were generally reliable when reporting the presence of at least one CFL), it was apparent that CFL User Survey respondents who had at least one CFL were more likely to agree to participate in the In-Home Lighting Audit than were CFL User Survey respondents who had no CFLs. To correct for this In-Home Lighting Audit self-selection bias, the lighting audit data were weighted to reflect the actual proportion of CFL users in a given state as determined from the CFL User Survey data. All results described in the remainder of this section incorporate this weighting scheme.[12]

To determine the saturation of CFLs in Comparison Area homes, the CFL Market Effects Team divided the number of CFLs installed in each audited home by the number of MSB sockets found in the home, and then averaged the individual homes' values for each state. We performed comparable calculations to derive the saturation of other (non-CFL) types of MSB lamps and the percentage of all MSB sockets that are empty in each state.

Table A-20 shows the average numbers and saturations of CFLs, other MSB lamps, and empty sockets for Georgia, Kansas, and Pennsylvania.

[12] Note that this is in addition to the demographic weighting described earlier.

Table A- 20. CFL, Non-CFL Medium Screw-Base Lamp and Empty Socket Counts and Saturations[13]

State		Total Medium Screw-Base Sockets	CFLs Installed	Non-CFL MSBLs Installed	Empty Sockets
Georgia (n=63)	Number	41.2	7.7	32.9	0.6
	Saturation	100%	19%	80%	1%
Kansas (n=70)	Number	47.0	13.6	32.3	1.1
	Saturation	100%	29%	69%	2%
Pennsylvania (n=60)	Number	31.2	9.0	21.1	1.1
	Saturation	100%	29%	68%	3%

As shown in Table A-21, the CFL Market Effects Team found very few specialty CFLs installed in any homes either in any of the three Comparison Area states. While the Team observed 3-way CFLs in a small percentage of MSB sockets in each state, nearly no dimmable CFLs were found.

Table A- 21. Percentage of Nonspecialty, Dimmable, and 3-Way CFLs Installed

State	Total Number of CFLs Installed	% Non-Specialty CFLs	% Dimmable CFLs	% 3-Way CFLs
Georgia (n=44)	7.7	95.3%	0.0%	4.6%
Kansas (n= 58)	13.6	99.4%	0.0%	0.5%
Pennsylvania (n=43)	9.0	98.6%	0.2%	1.1%

Georgia, Kansas, and Pennsylvania homes all have two to three non-specialty CFLs and no (or close to zero) specialty CFLs in storage (Table A-22).

[13] These results are from the single wave of in-home surveys conducted for the CFL Market Effects evaluation. These results will be integrated with results from subsequent waves of in-homes surveys for presentation and use in the Final CFL Market Effects Report.

Table A- 22. Number of CFLs and Incandescents in Storage

State	Non-Specialty CFLs	Dimmable CFLs	3-Way CFLs	Other (non-CFL) MSBLs
Georgia (n=63)	1.5	0.0	0.0	1.4
Kansas Area (n=70)	2.8	0.0	0.0	4.3
Pennsylvania (n=60)	1.7	0.0	<0.1	2.8

Appendix B

Comprehensive Shelf Stocking Survey Instrument and Sampling Plan

Appendix B: Comprehensive Shelf Stocking Survey Instrument and Sampling Plan

CFL Market Effects Comprehensive Shelf Stocking Sampling Plan for California

The sampling plan for the Comprehensive Shelf Stocking Survey that was conducted in California as part of the CFL Market Effects evaluation is shown Table 1 in the columns titled "Comprehensive ME Sample" below. Because the CFL Market Effects and the Residential Retrofit shelf stocking surveys were intended to gather much of the same information (the Residential Retrofit shelf survey instrument is an abridged version of the CFL Market Effects shelf survey instrument), and the information gathered through each will be utilized by the other, the two sampling plans were developed simultaneously. The sampling plans for the two Residential Retrofit survey waves are therefore also shown in the table below in the columns titled, "Abridged Shelf Stocking—Completed" and "Abridged Shelf Stocking—Spring '09," respectively.

The California CFL Market Effects Comprehensive Shelf Stocking Survey sampling plan was developed with the following guidelines in mind:

- Include a minimum of 3 stores in each retailer channel where light bulbs are commonly sold (one in each of the three IOU service areas).
- To the extent possible, mirror the distribution of market-level CFL sales in California by retailer type (shown below in the "CFL User Survey" and "ULP/Cadmus/RMST" columns) in the Shelf Stocking Survey sampling plan.
- Given the limited total number of comprehensive California surveys to be undertaken through this effort (40), focus surveys on gap-filling the abridged shelf stocking surveys, particularly with regard to participating retailers that did not previously allow shelf-stocking as part of the customer intercept surveys, plus some non-participating retailer chains.
- Examine the findings of the CFL User Survey to determine the stores/retail chains at which California consumers purchased CFLs. Compare these stores to the ULP program database of participating retailers to determine the percentage of participating and non-participating retailers to include in the sampling plan. Note that this comparison suggested very few CFL sales occurred at non-participating retail chains.
- On an individual store level, examine IOU program tracking databases to distinguish participants (i.e., stores that have at some time participated in one of the IOUs' Upstream Lighting Programs) from non-participants. Note that because virtually all of the large home improvement stores located within the three IOUs' service areas have participated in the ULP, the sampling plan includes no large home improvement non-participants.

Table 1. CFL Market Effects Comprehensive Shelf Stocking Sampling Plan for California

Retail Channel	Avg Distribution		Abridged Shelf Stocking--Completed		Comprehensive ME Sample			Abridged Shelf Stocking--Spring '09		Total Sample	
	CFL User Survey	ULP/Cadmus/RMST	Stores	%	Partic Stores	Nonpart stores	%	Stores	%	Stores	%
Discount (e.g., 99 Cent, Dollar Store)	9%	12%	53	17%	3		8%	17	21%	73	17%
Drug	3%	5%	43	13%	3		8%	6	8%	52	12%
Grocery	8%	24%	79	25%	3		8%	25	31%	107	24%
Hardware (small)	5%	3%	43	13%	3		8%	5	6%	51	12%
Home Improvement (large--e.g., Home Depot, Lowe's)	39%	21%	42	13%	14		35%	8	10%	64	15%
Mass Merchandiser/ Membership	32%	35%	61	19%	9	5	35%	19	24%	94	21%
Other	4%	0%	0	0%	0		0%		0%	0	0%
TOTAL	***100%***	***100%***	***321***	***100%***	***35***	***5***	***100%***	***80***	***100%***	***441***	***100%***

CFL Market Effects Comprehensive Shelf Stocking Sampling Plan for the Comparison Area

For the Comparison Area sample, we planned to visit 40 stores in each of the three comparison states. We reviewed the state-by-state CFL User Survey results to determine the stores and retail channels where respondents said they most commonly purchased lighting products. The sample was drawn to match as closely as possible the state-specific distribution of stores and retail channels CFL User Survey respondents had mentioned, while ensuring that the Comparison Area stores we would visit were similar to those we would visit in California.

Table 2. CFL Market Effects Comprehensive Shelf Stocking Sampling Plan for the Comparison Area

	Pennsylvania		Georgia		Kansas	
	Proposed Shelf Stocking Plan		Proposed Shelf Stocking Plan		Proposed Shelf Stocking Plan	
Retail Channel	N	%	N	%	N	%
Discount (such as 99 Cent, Dollar Store)	6	15%	6	15%	6	15%
Drug	0	0%	0	0%	0	0%
Grocery	6	15%	6	15%	6	15%
Hardware (small)	0	0%	0	0%	4	10%
Home Improvement (large—e.g., Home Depot, Lowe's)	12	30%	14	35%	9	23%
Lighting & Electronics	0	0%	0	0%	0	0%
Mass merchandise	10	25%	8	20%	9	23%
Membership clubs	6	15%	6	15%	6	15%
Other	0	0%	0	0%	0	0%

Weighting Results of the Shelf Stocking Sampling Surveys

The results from the shelf stocking survey will be summarized in two ways. For the Comprehensive Shelf Stocking Survey we will have full package counts by make/model, so we will be able to present data at the bulb level (i.e., reporting the percent of bulbs on display with certain characteristics). Where the results of the Abbreviated Shelf Survey get incorporated, however, the results will be reported at the make/model level (i.e., the percent of make/models on display with certain characteristics).

Many of our findings from the shelf survey will be presented at the retail sales channel level. However, to estimate state- or region-wide averages (for California and the Comparison Area, respectively) from the shelf stocking survey data, we will need to weight-up retail channel-specific data so that the overall result will be representative of the entire California market (and thereby correct for any under- or over-sampling in the Comprehensive Shelf Stocking Survey).

Since reliable CFL sales data by retail channel were not available, we instead developed weights based on the number of stores in California in each channel, combined with the average lighting display space within each channel. We determined the total number of California stores by purchasing retail channel market data from SSI within the relevant SIC codes. The SSI data were cleaned to remove stores that did not sell lighting and to ensure stores were appropriately categorized by retail channel. We calculated lighting display space by channel from the measurements taken during the Comprehensive Shelf Stocking Survey. The total lighting display space volume in California, broken out by retail channel, is shown in Table 3.

Table 3. Total Lighting Display Space Volume by Retail Channel (California)

Retail Channel	Volume	% of Total
Discount (e.g., 99 Cent, Dollar Store)	157,114	7%
Grocery	1,030,383	44%
Hardware (small)	534,649	23%
Home Improvement (large--e.g., Home Depot, Lowe's)	335,594	14%
Mass Merchandise	249,946	11%
Membership	60,528	3%

Shelf stocking data from the Comparison Area were developed with similar weights, thus comprising a baseline estimate of what shelf stocking in California might have looked like in the absence of the program.

Results from the shelf stocking study will provide a static, “snap shot” of lighting stocking practices; it will not necessarily representative of annual sales.

CPUC CFL Market Effects Comprehensive Shelf Stocking Study Data Collection Instrument

SECTION I. STORE MANAGER INTERVIEW GUIDE

Field staff name:	
Store name:	Date:
Store street address:	Store city and state:
Store type:	Store zip code:
Store manager name:	Store manager actual title:

(California stores only) We are conducting a study on behalf of the California Public Utilities Commission regarding compact fluorescent lighting in an effort to track the results of the energy efficiency programs run by the electric Investor-Owned Utilities (IOUs) in the state of California [Pacific Gas and Electric (PG&E or PGE), San Diego Gas & Electric (SDG&E or SDGE), and Southern California Edison (SCE)]. As part of this study, we are talking to retail store managers across the state about their sales and stocking practices for light bulbs. Your responses are confidential and will not be linked to your particular store by name or address.

(Non-California stores only) We are conducting a national study regarding compact fluorescent lighting. As part of this study, we are talking to retail store managers in states across the U.S. about their sales and stocking practices for light bulbs. Your responses are confidential and will not be linked to your particular store by name or address.

Store name/City/Date: _____

Product Sales Estimates

1. Does the light bulb product ***stocking*** observed today reflect your typical stocking pattern?
   1. *Yes*
   2. *No*, How does it differ? (PROBE: quantity or types of bulbs offered?)

      _____

      Describe stocking change (% increase/decrease compared to today)

      _____

   3. *Don't Know*

2. Does your ***stocking*** pattern have seasonal cycles or otherwise fluctuate during the year?
   1. *Yes*
      When? _____
      What changes? _____
      Describe stocking change (% increase/decrease compared to today)

      _____

   2. *No*
   3. *Don't Know*

   PROBES: Seasonal—Spring, Summer, Fall, Winter
   Events/promotions—Earth Day (spring), *Change a Light*, *Change the World* (fall), utility promotions, other

3. Is the ***stocking*** pattern observed today similar to the stocking pattern this time last year (April 2008)?
   1. *Yes*
   2. *No*, How does it differ? (PROBE: different lighting availability or quantity?)

      _____

      Describe stocking volume (% increase/decrease compared to today)

      _____

   3. *Don't Know*

4. Do your light bulb ***sales*** have seasonal cycles or otherwise fluctuate during the year? Please specify if sales change for CFL or incandescent bulbs.
   1. *Yes*, when do your sales increase and by what percent would you estimate they increase? (When?) _____
      (% Increase) _____
      If sales decrease during the year, when and by what percent would you estimate they decrease? (When?)_____
      (% Decrease) _____
   2. *No*
   3. *Don't Know*

   PROBES: Seasonal—Spring, Summer, Fall, Winter

Events/promotions—Earth Day (spring), *Change a Light*, *Change the World* (fall), Utility promotions, other

5. Given the incandescent stock you currently have on your sales floor, how long do you estimate it would take to sell out all of your incandescent bulbs if you did not restock them? How about CFL bulbs? (if unable to provide estimate, probe for range of days, weeks or months).
   a. Incandescent bulbs: _____
   b. CFL bubs (all): _____
   c. (Participants Only) [IOU Name] Upstream Lighting Program CFL bulbs: _____

6. Considering data you might have available or your personal knowledge, what would you estimate the total ***sales*** of all CFLs to be for your store over the course of a month or a year? What is the source of your estimate? How much confidence, in percentage terms, would you put to this estimate (i.e., within 10%, 20%, 30%, etc.)? How would that breakdown between screw-based and pin-based CFLs?

	Estimate	Time (mo, yr)	Source (data, self estimate)	Confidence
a. All CFL				%
b. Screw CFL				%
c. Pin CFL				%

7. (Participants Only) What percent of your total CFL ***sales*** would you estimate are models purchased through the [IOU Name] Upstream Lighting Program? _____%

8. What would you estimate total ***sales*** of incandescent bulbs for your store over the course of a month or a year? What is the source of your estimate? How much confidence, in percentage terms, would you put to this estimate (i.e., within 10%, 20%, 30%, etc.)?

	Estimate	Time (mo, yr)	Source (data, self estimate)	Confidence
Incandescents				%

Influences on Sales

9. (Participants Only) The [IOU Name] Upstream Lighting Program provides incentives through manufacturer buydowns and point-of-sale retailer discounts. Have the reduced prices impacted the sale of other compact fluorescent bulbs in your store?
   1. *Yes* (How? PROBE: Sales increased/decreased, stock more/fewer models, other CFL prices increased/decreased, other)
      _____
      _____
      _____
   2. *No*
   3. *(Don't know)*

10. In the last year, what effect have each of the following had on your sales of ENERGY STAR light bulbs? If the effect was positive or negative, approximately what was the % change in your sales?

a. The economy:	*Positive*	*Negative*	*No Effect*	*Don't know*	_____ %
b. Higher energy prices:	*Positive*	*Negative*	*No Effect*	*Don't know*	_____ %
c. New federal standards to improve the energy efficiency of light bulbs:	*Positive*	*Negative*	*No Effect*	*Don't know*	_____ %
d. State standards for lighting:	*Positive*	*Negative*	*No Effect*	*Don't know*	_____ %
e. Environmental concerns:	*Positive*	*Negative*	*No Effect*	*Don't know*	_____ %
f. New or improved energy efficient lighting technologies:	*Positive*	*Negative*	*No Effect*	*Don't know*	_____ %
g. The sales of competing retailers:	*Positive*	*Negative*	*No Effect*	*Don't know*	_____ %
h. (Participants Only) The [IOU Name] Upstream Lighting Program	*Positive*	*Negative*	*No Effect*	*Don't know*	_____ %

11. (Participants Only) Did you have an expectation that CFL sales would increase through your participation in the program?
    1. *Yes* _____
    2. *No* _____
    3. *Don't know*

12. (Participants Only, IF YES to previous question) Has your expectation of increased sales through the program been met?
    1. *Yes* Why do you say that? _____
    2. *No* Why do you say that? _____
    3. *Don't know*

13. Does your store partake in any independent marketing or promoting of ENERGY STAR light bulbs (Participants Only: without [IOU Name] Upstream Lighting Program sponsor involvement)?
    1. *Yes*
    2. *No*
    3. *Don't know*

    If so, what do you do?

    _____
    _____

14. (Participants Only) When your store and/or the sponsors are promoting the Energy Star light bulbs, do your sales of these products…?
    1. *Increase*
    2. *Decrease*
    3. *Stay the Same*
    4. *Don't know*

    If increase or decrease, by how much? (Probe for a percent estimate)
    CFL Bulbs: _____%

Program Influence on Stocking

15. (Participants Only) Did you carry ENERGY STAR compact fluorescent light bulbs prior to participating in the [IOU Name] Upstream Lighting Program?
    1. *Yes*
    2. *No*
    3. *Don't Know*

16. (Participants Only) Do you stock ENERGY STAR compact fluorescent light bulbs year round or just during special promotions?
    1. *Year Round*
    2. *Special Promotions* (Specify: Which ones, what time of year?)_____
    3. *Other*: _____

    PROBES: Seasonal—Spring, Summer, Fall, Winter
    Events/promotions—Earth Day (spring), *Change a Light*, *Change the World* (fall), utility promotions, other

17. (Participants Only) Would your store stock ENERGY STAR light bulbs without the support of the [IOU Name] Upstream Lighting Program?
    1. *Yes*, why? _____
    2. *No*, why? _____
    3. *Don't Know*

18. (Participants Only) How has participating in the program affected the number of models of ENERGY STAR light bulbs that your store carries in the last year?
    1. *Carrying more*
    2. *Carrying less*
    3. *Carrying the same*
    4. *Don't know*

19. (Participants Only) How about over the past three years? How has participating in the program affected the number of models of ENERGY STAR light bulbs that your store carries over the past three years?
    1. *Carrying more*
    2. *Carrying less*
    3. *Carrying the same*
    4. *Don't know*
    5. *Have not participated in the program that long*

20. As part of this visit, we are conducting an assessment of the light bulb units on the sales floor. Can you provide us with counts of your CFL and incandescent bulb sales for the past year based on your electronic point-of-sales (POS) data or other sales records? [Assure respondent of confidentiality: "This information would be kept strictly confidential and your store would not be linked with any sales figures." (California stores ONLY) "We are using this information to estimate the impact of energy-efficiency programs run by the electric Investor-Owned Utilities in California on light bulb sales." (Non-California stores ONLY) "We are using this information to estimate the impact of CFL sales on light bulb sales across the U.S."]
    1. *Yes [Arrange for data to be emailed to project supervisor, xxname, xxaddress if not immediately available.]*
    2. *No*

SECTION II. SHELF SURVEY COMPREHENSIVE OBSERVATIONS

21. Does one particular CFL model (or a couple of CFL models) dominate inventory?
    1. *Yes*
    2. *No*

    If yes, describe manufacturer, style and wattage

    _____
    _____
    _____
    _____

    Also describe degree of dominance (e.g., 100+ packages of this model, 4 or 5 packages of each other model):

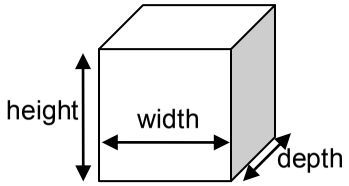
    _____
    _____
    _____
    _____

SECTION III: STORE AUDIT FORM

22. Measure light bulb displays.

ALL MEASUREMENTS IN INCHES

HEIGHT = top to bottom
WIDTH = left to right
DEPTH = front to back



If all displays of a certain type (e.g., all aisle displays) have the same measurements, record all as "SIZE 1" and indicate the number of similar displays in the "# displays of this size." Otherwise, if displays of a certain type have different measurements, record them separately (as size 1, size 2, size 3, etc.). Use additional sheets if necessary.

Display Type	# DISPLAYS (of this type and size)	TOTAL DISPLAY DIMENSIONS			% OF DISPLAY SPACE BY BULB TYPE								
							Other Types						
		Height	Width	Depth	CFL	Incan-descent	Halogen	LED	Cold Cathode	Mercury Vapor	Metal Halide	High Pressure Sodium	Other
Aisle, Shelf, or Shelves – SIZE 1 (Bulbs displayed on wall/shelves in aisle)													
Aisle, Shelf, or Shelves – SIZE 2													
Aisle, Shelf, or Shelves – SIZE 3													
Endcap – SIZE 1 (End of aisle display, perpendicular to aisle)													
Endcap – SIZE 2													
Endcap – SIZE 3													
Free-standing display / pallet – SIZE 1 (Not mounted/hung on a wall)													
Free-standing display / pallet – SIZE 2													
Free-standing display / pallet – SIZE 3													
Fenceline – SIZE 1 (A row of bulb boxes or pallets)													
Fenceline – SIZE 2													
Fenceline – SIZE 3													
Other 1 Describe:													
Other 2 Describe:													
Other 3 Describe:													

Code List Table

Auditor Note: Use the following Bulb Codes for the bulb types depicted.

Bulb Style	Code	Image	Bulb Style	Code	Image
1. Spiral/twister	**TW**		6. Spotlight/ reflector/flood	**SP**	
2. Globe (e.g., for bathroom vanity fixtures)	**GL**		7. Circline	**CI**	
3. A-lamp (shaped like standard incandescent)	**AL**		8. Tube Style	**TU**	
4. Torpedo/Bullet	**TO**		9. Night Light	**NL**	
5. Bug light (yellow color)	**BU**		10. Other (Describe to right of table)	**OT**	

Additional Codes

Product Type Codes (Column 3)			Base Type Codes (Column 4)		
CFL Incandescent Halogen LED Cold Cathode	**CFL** **I** **H** **LED** **CC**		Screw Pin GU-type Candelabra	**S** **P** **GU** **C**	

Store name/City/Date: _____

IF ONLY ONE PRICE SHOWN: Try to determine whether it's a discounted price/sale price or if it's a full-priced CFL. If sale price: record value in "Discounted price." If full price: record value in "Original Price."

SECTION IV. BULB INVENTORY DATA COLLECTION FORM

Manufacturer/ Brand	**Bulb Style Code** (from Code List Table)	**Product Type** (**CFL**, **I**ncandescent, **H**alogen, **LED**, **C**old **C**athode)	**Base Type** (**S**crew, **P**in, **GU**, **C**andelabra	**Model Number**	**Location** (A=Aisle E=End-cap F=Fence-line D=Free-standing display P=Pallet O=Other)	**Qty in Pack**	**# of Packages**	**CA IOU Sponsor labeled?**(Yes/No)	**Program Year** (If CA IOU Labeled)	**Full/ Original Price** (If discounted: record price before discount. If not discounted: record product price)	**Discount Amount** (if on sale/discounted)	**Discounted Price** (if on sale/ discounted)	**Rated life** (hours)	**Color temp.** (Kelvin--K)	**Lumens**	**Wattage**	**Fixture Included?** (nightlights only)	**3-way?**	**Dimmable?**	**ENERGY STAR?**
										$	$	$					☐	☐	☐	☐
										$	$	$					☐	☐	☐	☐
										$	$	$					☐	☐	☐	☐
										$	$	$					☐	☐	☐	☐
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Manufacturer/ Brand	**Bulb Style Code** (from Code List Table)	**Product Type** (**CFL**, **I**ncandescent, **H**alogen, **LED**, **C**old **C**athode)	**Base Type** (**S**crew, **P**in, **GU**, **C**andelabra	**Model Number**	**Location** (A=Aisle E=End-cap F=Fence-line D=Free-standing display P=Pallet O=Other)	**Qty in Pack**	**# of Packages**	**CA IOU Sponsor labeled?**(Yes/No)	**Program Year** (If CA IOU Labeled)	**Full/ Original Price** (If discounted: record price before discount. If not discounted: record product price)	**Discount Amount** (if on sale/discounted)	**Discounted Price** (if on sale/ discounted)	**Rated life** (hours)	**Color temp.** (Kelvin--K)	**Lumens**	**Wattage**	**Fixture Included?** (nightlights only)	**3-way?**	**Dimmable?**	**ENERGY STAR?**
										$	$	$					☐	☐	☐	☐
										$	$	$					☐	☐	☐	☐
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										$	$	$					☐	☐	☐	☐

Manufacturer/ Brand	Bulb Style Code (from Code List Table)	Product Type (CFL, Incandescent, Halogen, LED, Cold Cathode)	Base Type (Screw, Pin, GU, Candelabra	Model Number	Location (A=Aisle E=End-cap F=Fence-line D=Free-standing display P=Pallet O=Other)	Qty in Pack	# of Packages	CA IOU Sponsor labeled?(Yes/No)	Program Year (If CA IOU Labeled)	Full/ Original Price (If discounted: record price before discount. If not discounted: record product price)	Discount Amount (if on sale/discounted)	Discounted Price (if on sale/ discounted)	Rated life (hours)	Color temp. (Kelvin--K)	Lumens	Wattage	Fixture Included? (nightlights only)	3-way?	Dimmable?	ENERGY STAR?
										$	$	$					☐	☐	☐	☐
										$	$	$					☐	☐	☐	☐
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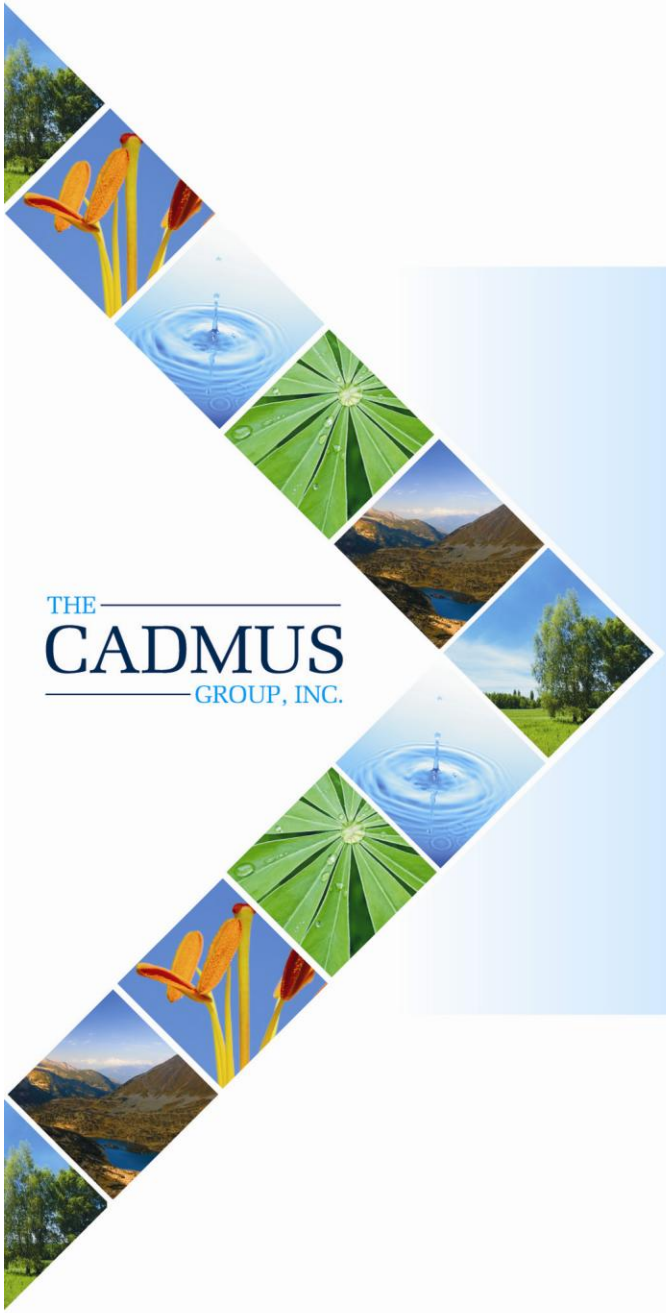
Use additional sheets as necessary

Appendix C

Comprehensive Shelf Stocking Survey Findings



THE CADMUS GROUP, INC.

CFL Market Effects Comprehensive Shelf Stocking Findings

October, 2009
(updated December 2009)

Comprehensive vs. Abbreviated Shelf Stocking Studies

	Comprehensive Shelf Stocking	**Abbreviated Shelf Stocking**
Contract Group	CFL Market Effects	Residential Retrofit and utility process evaluations
States	CA and Comparison States (GA, KS, PA)	California only
Goal	160 Stores	Over 400 Stores
Waves/Timeframe	1 Wave (April/May '09)	5 Waves (2008-2009)
Bulb Types	CFL, incandescent, halogen, and LED bulbs	CFL and comparable incandescent bulbs only
Package Counts (vs. make/model only)	All retail channels	All channels except for large home improvement and mass merchandise

Methodology

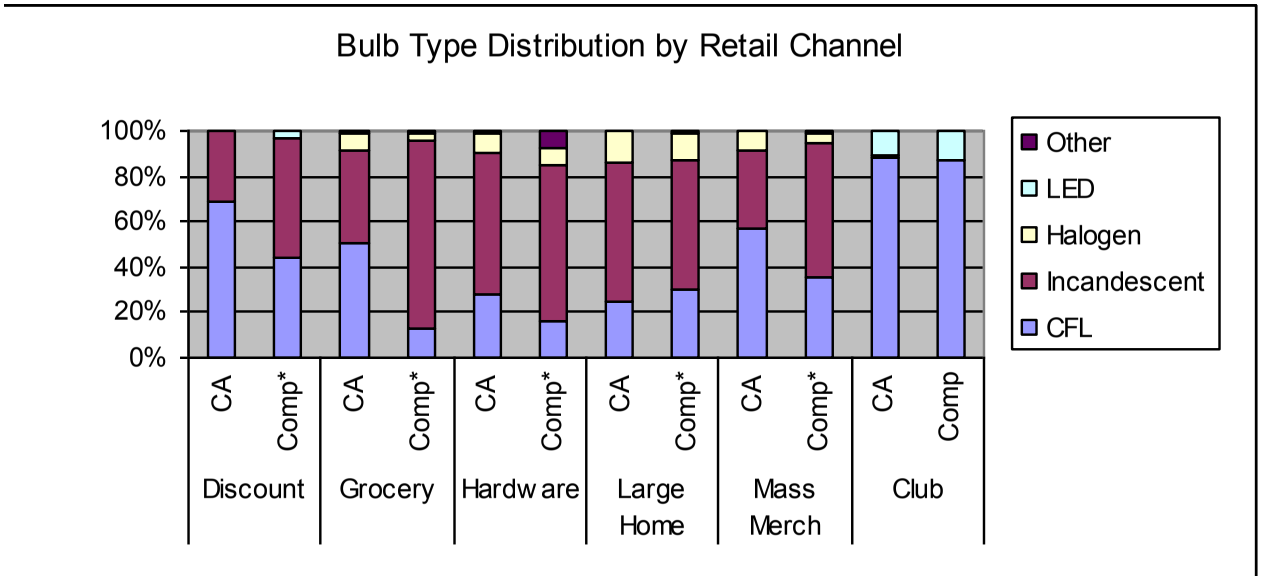
- Goal: Proportional sampling to CFL Purchases
  - Comparison Area stores chosen from CFL User (Telephone) Survey responses where CFLs are most commonly purchased
  - California stores chosen from CFL User Survey and ULP program records
- Store Visits:
  - Short manager interview
  - Full lighting inventory of all incandescent, CFL, Halogen, and LED bulbs
  - Linear fluorescent, metal halide, HPS, holiday, and electroluminescent bulbs excluded
- Data represent a single snapshot in time
  - Not necessarily representative of annual sales or typical stocking patterns
- State/regional averages based on retail channel-level findings and weighted by:
  - Number of stores in each channel
  - Lighting display space within each channel

Sample (Spring 2009 Only)

- Four states and seven retail channels
- Over 1 million bulbs counted in 258 stores

	Completed Visits	
	CA	Comparison Area
Discount *(Dollar Stores, Big Lots)*	20	20
Drug *(Longs, CVS)*	9	
Grocery *(Vons, Albertsons)*	29	20
Hardware *(Ace)*	7	7
Home Improvement *(Lowes. Home Depot)*	21	36
Mass Merchandise *(Walmart, Target)*	24	31
Membership-Club *(Costco, Sams Club*	13	21
Total	***123***	***135***

Bulb Type Distribution by Retail Channel (based on CFL bulb counts)*

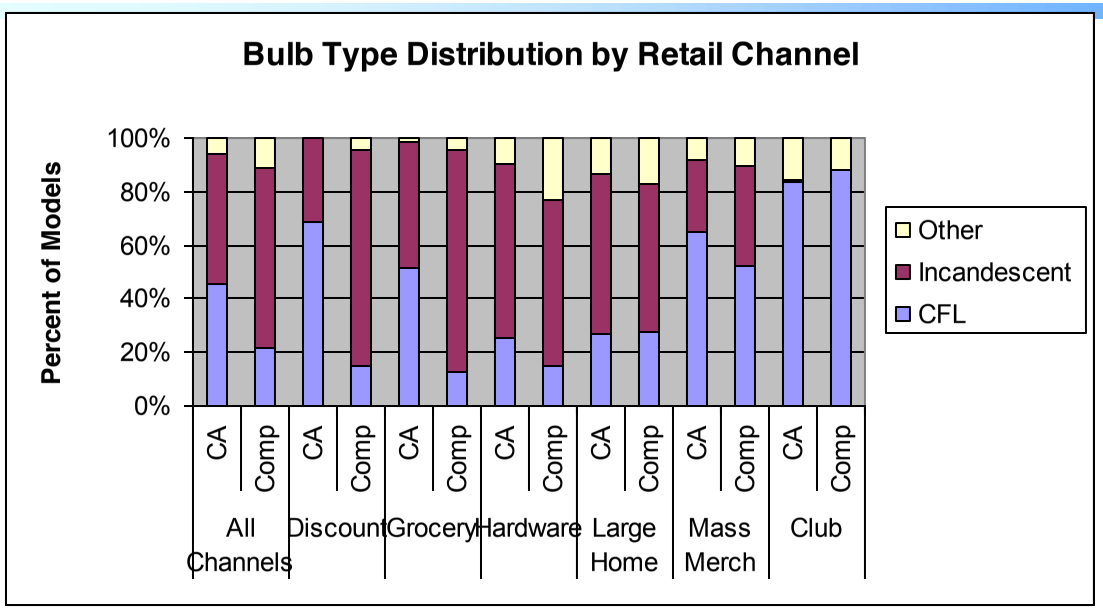


Indicates percentage of CFLs Is statistically different between California and the Comparison Area.

- **Discount, Grocery, Hardware, & Mass Merchandise**: Had much higher proportion of CFLs in California than in the Comparison Area (statistically significant)
- **Large Home Improvement:** Had a higher proportion of CFLs in the Comparison Area than in California (statistically significant)
- **Membership Club**: did not stock incandescent bulbs
- * from Comprehensive Shelf Stocking Survey only

THE CADMUS GROUP, INC.

Bulb Type Distribution by Retail Channel (based on proportion of CFL models on shelves)*



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- **Membership Club**: did not stock incandescent bulbs

•* Based on combined and weighted Abbreviated and Comprehensive Shelf Stockings Surveys

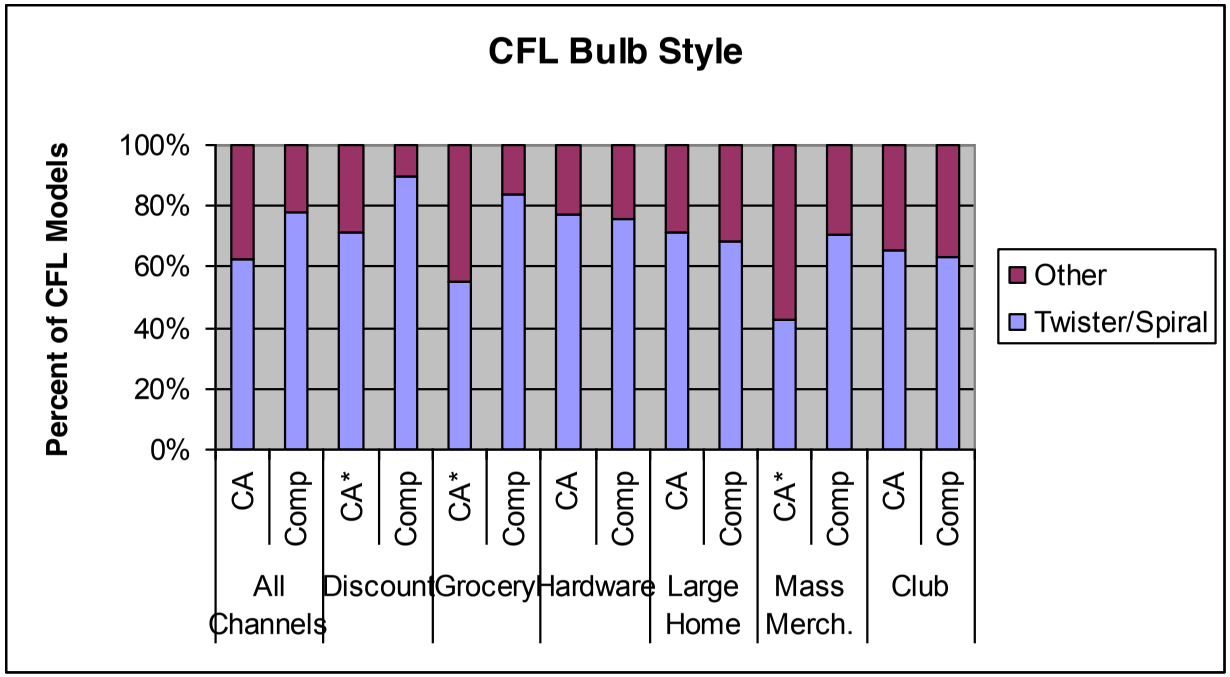
CFL Packages

- Membership stores stock highest average lamps/package (multipacks)
- Grocery and Hardware stores stock fewer multipacks

	Average Lamps/Package	
	CA	Comp
Discount	2.3	2.2
Grocery	1.4	1.4
Hardware*	1.3	1.5
Home Improvement*	1.7	1.9
Mass Merchandise	2.1	2.2
Membership Club	4.4	4.7
All Channels*	1.9	2.1

** Indicates package size is statistically different between California and the Comparison Area*

CFL Bulb Style by Retail Channel



- **Other Bulbs** include A-lamp, bug light, spot/reflector/flood, circline, globe, nightlight, torpedo, and tube styles
- **Discount Stores**: significantly higher proportion of twister/spiral CFLs in CA than in Comparison Area
- **Grocery, Hardware, Mass Merchandise, Large Home Improvement, and Club**: similar proportions of twister/spirals in California and the Comparison Area

** Indicates statistically significant difference between California and the Comparison Area*

Detailed Breakout of CFL Bulb Style by Retail Channel

Based on CFL bulb counts (from Comprehensive Shelf Stocking Survey only):

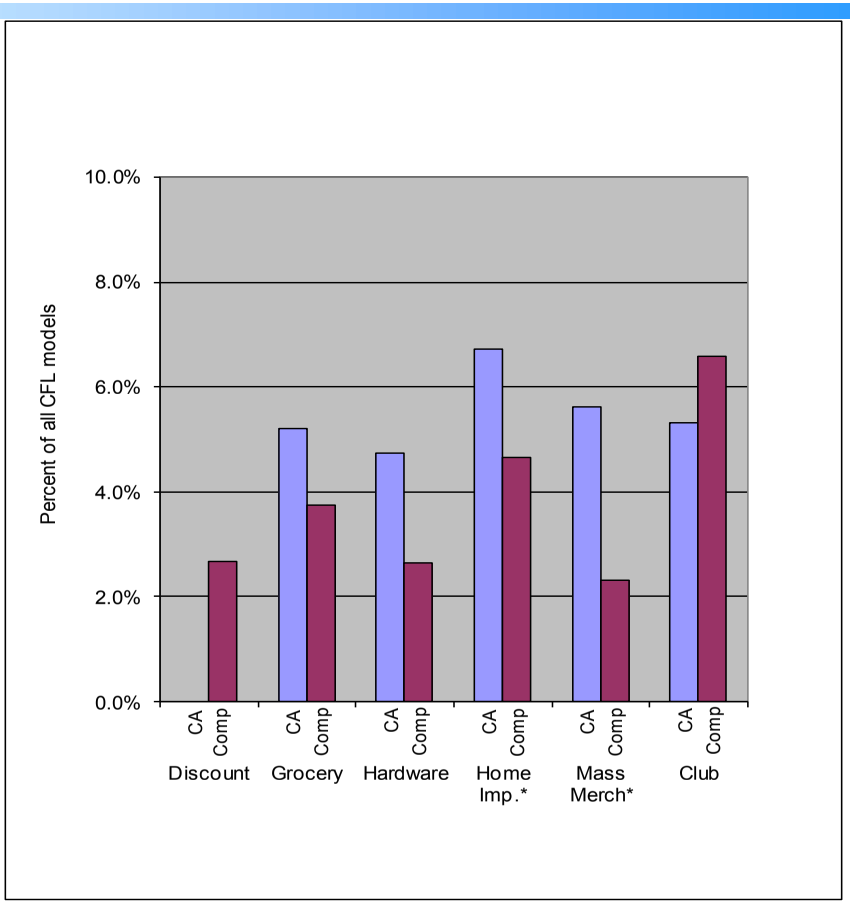
	Discount		Grocery		Hardware		Large Home Improvement		Mass Merchandise		Membership - Club	
	CA	Comp	CA	Comp	CA	Comp	CA	Comp	CA	Comp	CA	Comp
A-Lamp	2%	5%	7%	2%	6%	3%	8%	5%	25%	19%	9%	12%
Bug Light	0%	0%	2%	3%	1%	3%	2%	2%	1%	2%	0%	0%
Circline	0%	0%	0%	0%	4%	5%	4%	5%	0%	1%	1%	0%
Globe	3%	1%	3%	7%	5%	8%	7%	6%	7%	9%	7%	10%
Nightlight	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Other	0%	0%	3%	1%	0%	0%	0%	1%	1%	1%	0%	0%
Spiral/Twister	90%	79%	66%	64%	49%	47%	50%	48%	49%	51%	34%	31%
Spot/Reflector/Flood	3%	12%	14%	16%	16%	14%	20%	19%	12%	11%	37%	38%
Torpedo/Bullet	0%	1%	3%	8%	4%	7%	2%	3%	4%	7%	5%	9%
Tube	1%	2%	1%	1%	14%	12%	8%	10%	1%	0%	7%	0%

Based on proportion of CFL models on shelves (from combined Abbreviated and Comprehensive Shelf Stocking Surveys):

	All Channels		Discount		Grocery		Hardware		Large Home		Mass Merch.		Club	
	CA	Comp	CA*	Comp	CA*	Comp	CA	Comp	CA	Comp	CA*	Comp	CA	Comp
Twister/Spiral	62%	78%	71%	89%	55%	83%	77%	75%	71%	68%	43%	70%	65%	63%
Other	37%	22%	28%	10%	45%	16%	23%	24%	29%	32%	57%	30%	35%	37%

Specialty CFLs: Dimmable Bulbs

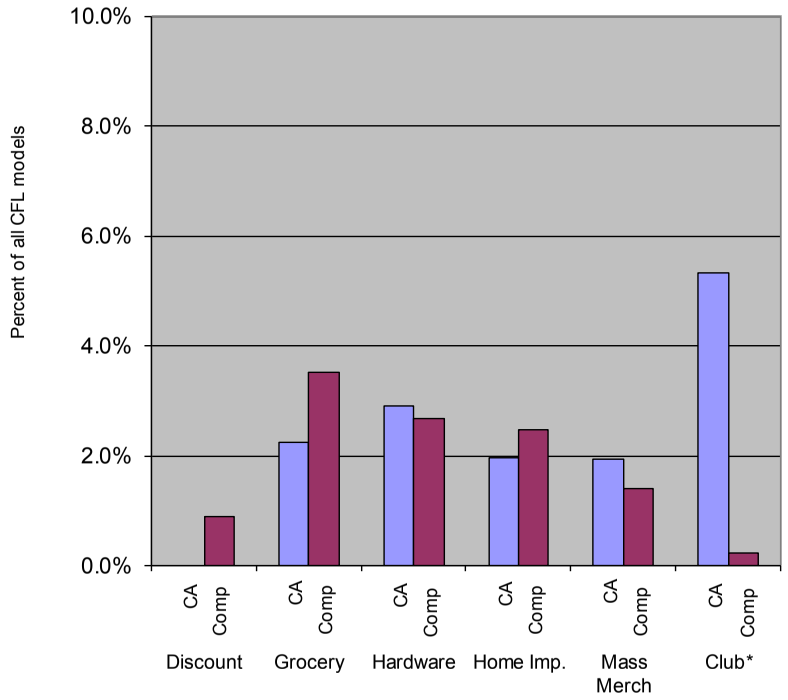
- Presence of dimmable CFLs varied by retail channel and region, but did not exceed 10%
- Only in Home Improvement and Mass Merchandise stores are there significantly more dimmable CFLs than in California the Comparison Area



** Indicates statistically significant difference between California and the Comparison Area*

Specialty CFLs: 3-Way Bulbs

** Indicates statistically significant difference between California and the Comparison Area*

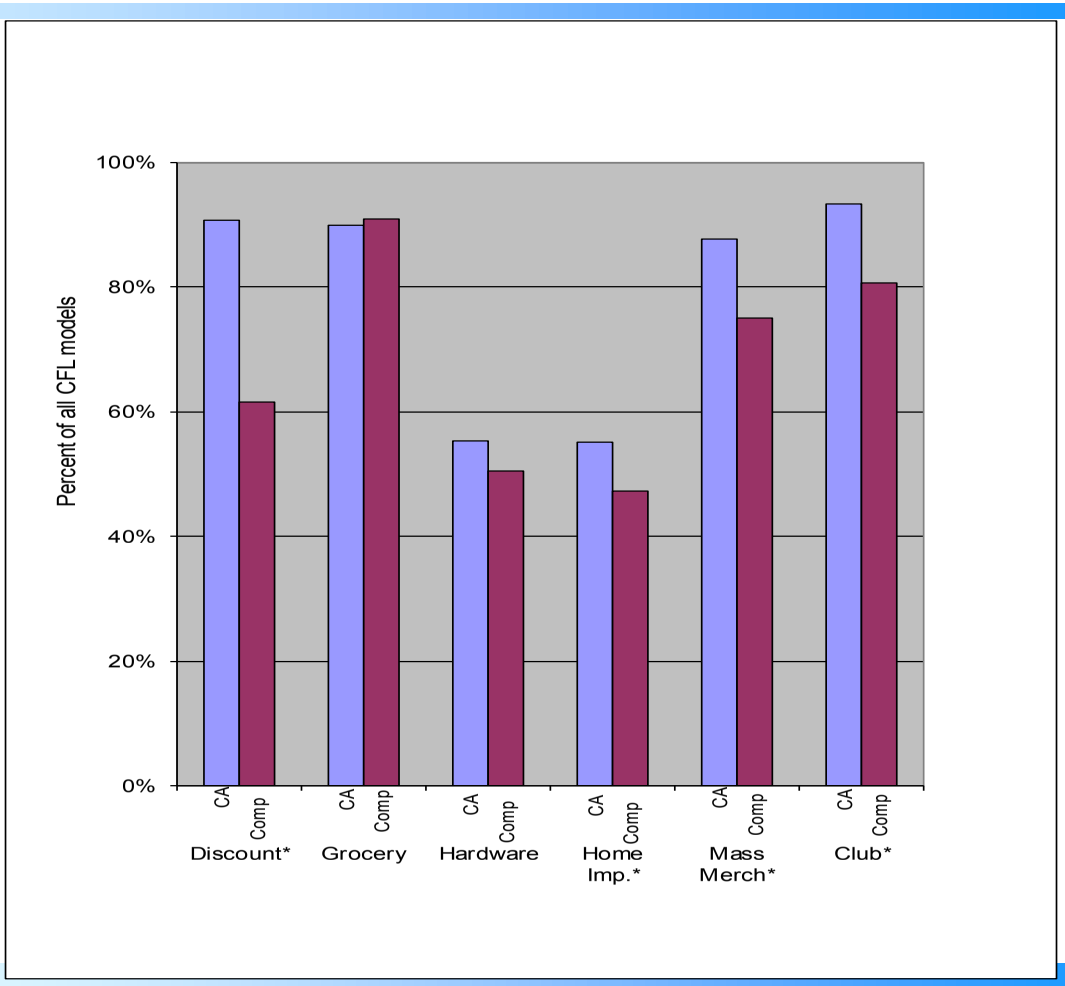


- Availability of 3-way CFLs was limited: 3-way CFLs accounted for less than 5% of all CFL models in all retail channels in both California and the Comparison Area
- Availability of 3-way CFLs varied by region and retail channel

ENERGY STAR-Labeled CFLs

- Except in **Grocery** stores, California stores had a greater percentage of ENERGY STAR-labeled CFLs than did Comparison Area stores

- The difference in prevalence of ENERGY STAR bulbs was significantly different between California and Comparison Area for all retail channels



Detailed Breakout of CFL Features

Based on proportion of CFL models on shelves (from combined Abbreviated and Comprehensive Shelf Stocking Surveys):

	3-way		Energy Star		Dimmable		IOU Sponsored	
	CA	Comp Area	CA	Comp Area	CA	Comp Area	CA	Comp Area
Discount*	0%	0%	99%	65%	0%	6%	95%	0%
Grocery*	0%	1%	99%	94%	0%	2%	83%	0%
Hardware*	1%	1%	78%	62%	3%	1%	59%	0%
Home Improvement*	2%	1%	69%	55%	7%	2%	7%	0%
Mass Merchandise*	1%	0%	48%	79%	0%	2%	8%	0%
Membership*	0%	0%	100%	85%	8%	8%	78%	0%
Average Total	*0%*	*1%*	*85%*	*78%*	*2%*	*2%*	*60%*	*0%*

** Indicates statistical difference between California and the Comparison Area*

CFL Manufacturers

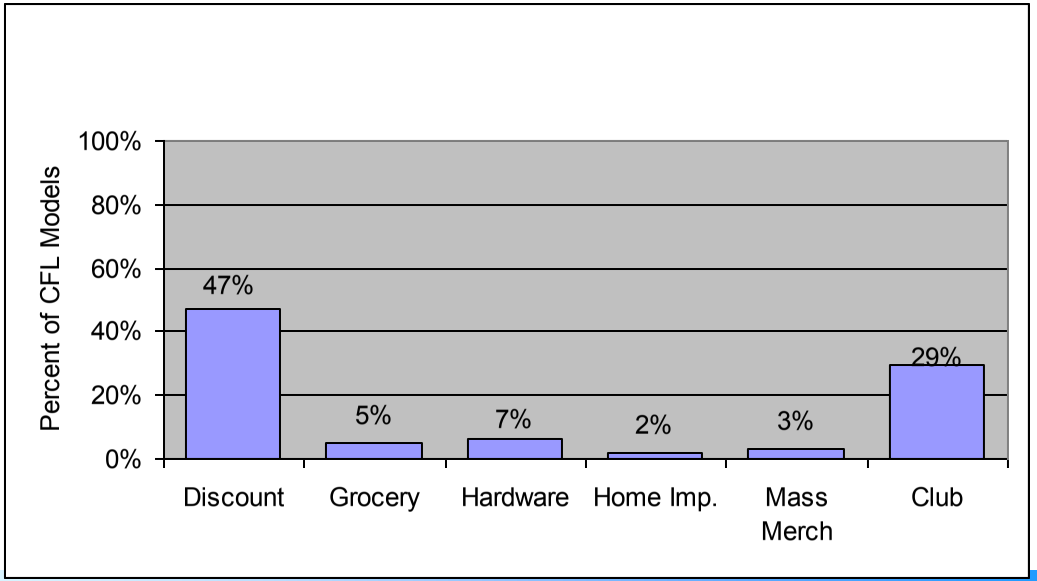
- Nearly 100% of CFL models in California and over 90% of models in the Comparison Area were manufactured by one of 17 companies
- Feit was the most prevalent in California, while General Electric was the most prevalent manufacturer in the Comparison Area

	California Percent	Comparison Area Percent
FEIT ELECTRIC*	27%	24%
SYLVANIA*	19%	7%
IKEA	13%	0%
N:VISION*	12%	11%
GENERAL ELECTRIC*	9%	26%
ECOSMART*	3%	2%
OPTOLIGHT*	3%	0%
LIGHTS OF AMERICA*	2%	1%
BRIGHT EFFECTS*	2%	10%
SUNRISE*	2%	0%
BUFFALO*	2%	0%
PHILIPS LIGHTING*	1%	7%
TECHNICAL CONSUMER PRODUCTS*	1%	2%
GREAT VALUE*	1%	1%
ULIGHTING AMERICA*	1%	0%
COMMERCIAL ELECTRIC*	1%	0%
BULB STAR*	1%	0%

** Indicates California Upstream Lighting participating manufacturer*

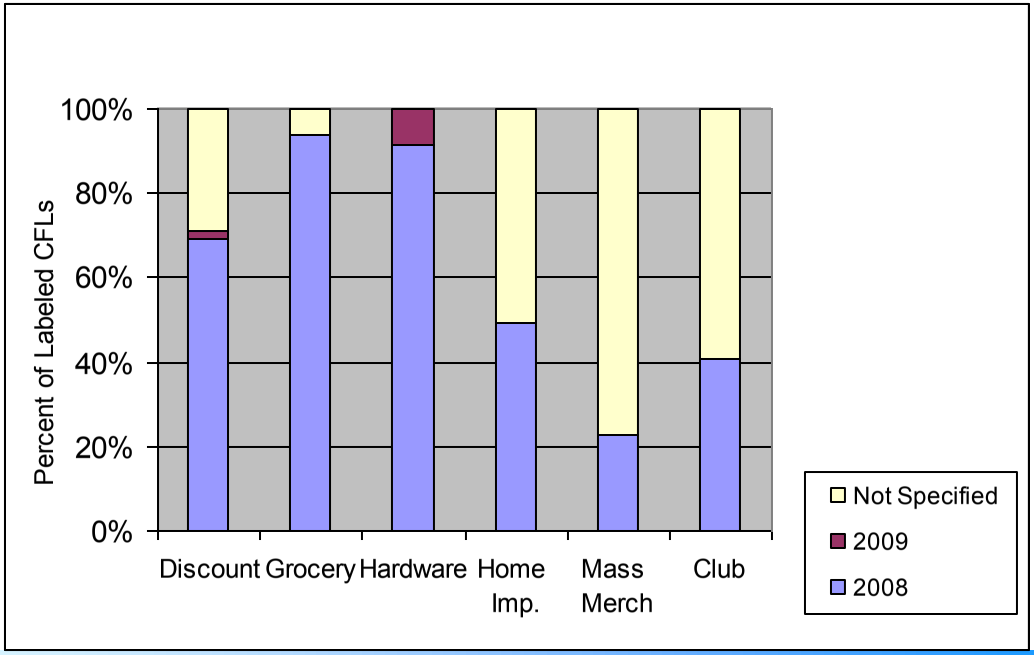
Utility Sponsor CFL Labels (California only)

- **Discount**: almost half of all CFL models had utility sponsor labels
- **Grocery, Hardware, Home Improvement, and Mass Merchandise**: fewer than 10% of all CFLs had utility sponsor labels.
- Remember: data represent a single snapshot in time; they do not necessarily show annual average of CFLs with utility-sponsor labels.



Utility Sponsor Labels: Program Year Indicators (California only)

- **Discount, Grocery, Hardware, Home Improvement**: 49% or more utility-sponsored CFLs were from program year 2008
- **Mass Merchandise and Membership Club**: majority of utility-sponsored CFLs did not have visible program year indications.
- **Discount and Hardware**: only retail channels with 2009 program year labels.

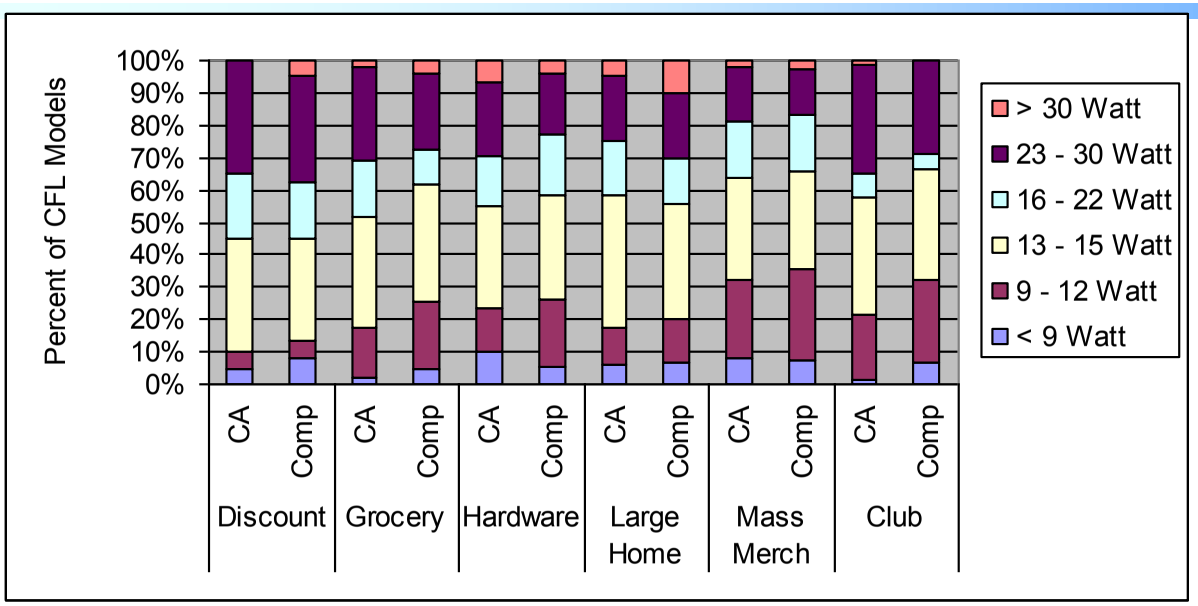


CFL Lumen and Wattage Averages

	Average Watts		Average Lumens	
	California	Comp Area	California	Comp Area
Discount	18	20	1,119	1,065
Grocery	17	18	1,041	1,017
Hardware	18	17	1,018	982
Home Improvement	17	23	1,010	1,036
Mass Merchandise	16	16	900	885
Membership Club	17	16	949	875

There are no statistically significant differences between California and the Comparison Area

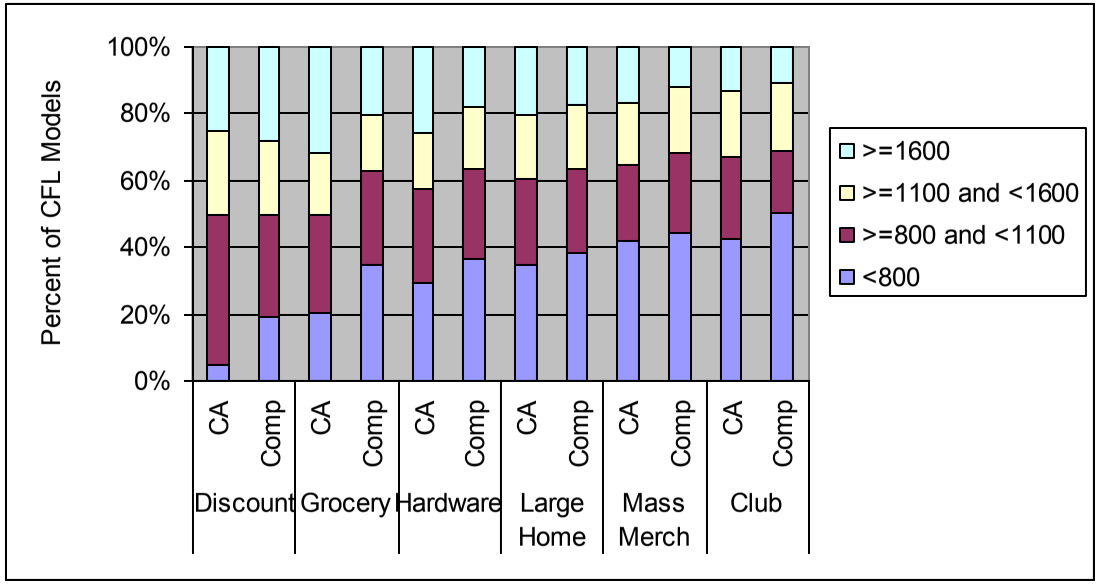
CFL Wattages



- 13-15 watt units were the most commonly found CFLs in most retail channels
- For all retail channels, the distribution of bulb wattages is statistically different between California and the Comparison Area

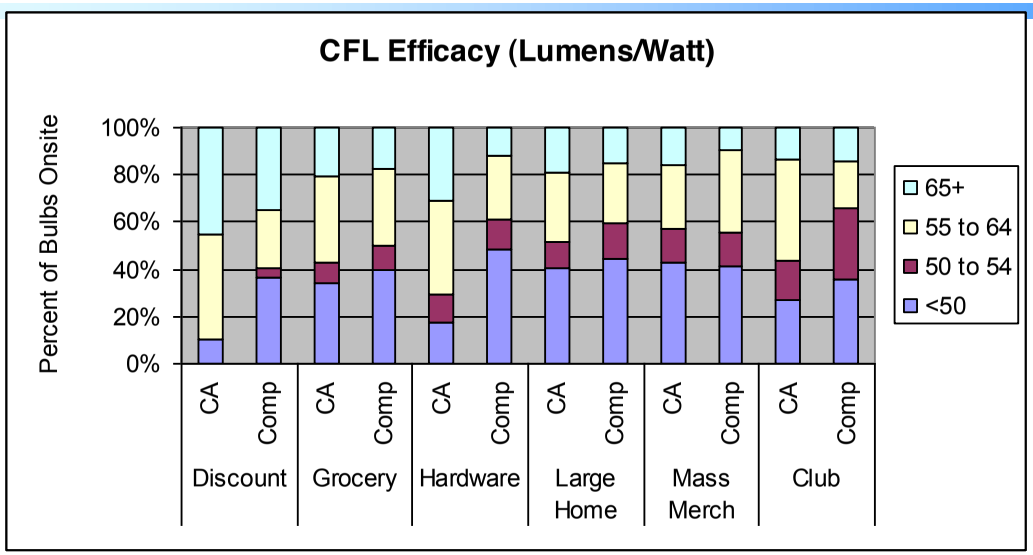
	< 9 Watt		9 - 12 Watt		13 - 15 Watt		16 - 22 Watt		23 - 30 Watt		> 30 Watt	
	CA	Comp	CA	Comp	CA	Comp	CA	Comp	CA	Comp	CA	Comp
Discount	5%	8%	5%	5%	35%	32%	20%	17%	35%	33%	0%	5%
Grocery	2%	4%	15%	21%	34%	36%	18%	11%	29%	23%	2%	4%
Hardware	10%	5%	13%	21%	32%	32%	15%	19%	23%	19%	7%	4%
Home Improvement	6%	7%	11%	13%	41%	36%	16%	14%	20%	20%	5%	10%
Mass Merchandise	8%	7%	24%	28%	32%	31%	17%	17%	16%	14%	2%	3%
Membership Club	1%	7%	20%	25%	36%	35%	7%	5%	34%	29%	1%	0%

CFL Lumens



	<800		>=800 and <1100		>=1100 and <1600		>=1600	
	CA	Comp	CA	Comp	CA	Comp	CA	Comp
Discount	5%	19%	45%	30%	25%	23%	25%	28%
Grocery	20%	34%	30%	28%	18%	17%	32%	20%
Hardware	29%	37%	28%	27%	17%	19%	26%	18%
Home Improvement	34%	38%	26%	25%	19%	19%	20%	18%
Mass Merchandise	42%	45%	23%	24%	18%	20%	17%	12%
Membership Club	42%	51%	25%	18%	19%	21%	13%	11%

CFL Efficacy



	Lumens per Watt									
	Average		<50		50 to 54		55 to 64		65+	
	CA	Comp	CA	Comp	CA	Comp	CA	Comp	CA	Comp
Discount	63.7	57.6*	10%	36%	0%	4%	45%	25%	45%	35%
Grocery	59.2	57.3	34%	40%	9%	10%	36%	33%	21%	17%
Hardware	57.0	56.6	18%	48%	12%	13%	40%	28%	31%	12%
Home Improvement	57.3	54.9*	40%	44%	11%	15%	29%	25%	19%	15%
Mass Merchandise	55.4	55.1	43%	41%	14%	15%	27%	35%	15%	9%
Membership Club	54.8	53.3	27%	35%	17%	30%	43%	20%	14%	14%

** Indicates the average efficacy is statistically significantly different between California and the Comparison Area*

Key Findings

- California stores had greater percentages of CFLs in most retail channels than did Comparison Area stores
  - Especially true in Discount and Grocery stores (channels targeted by ULP)
- Of CFLs:
  - Only in discount stores did California have a significantly lower percentage of other (non-spiral/twister) CFL styles than did the Comparison Area
- No incandescents were found in Membership stores in either region
- Specialty CFLs were not heavily stocked:
  - Dimmables are <10% of all CFLs in both regions
  - 3-ways are <5% of all CFLs in both regions

Key Findings (continued)

- Across most retail channels, a greater percentage of ENERGY STAR CFLs were found in California stores than in Comparison Area stores
- Nearly all manufacturers were in the CA ULP
  - GE and Feit were the most commonly found manufacturers
- Utility-sponsor labels were fairly common in some retail channels, uncommon in others (CA only):
  - Almost 50% of CFL models in Discount stores had utility labels
  - Fewer than 10% of CFL models in Grocery, Hardware, Home Improvement, and Mass Merchandise stores had utility labels

Key Findings (continued)

- Almost all program year labels found were for 2008 (CA only)
- 13 to 15 watt CFLs were the most common across most retail channels in both regions
- CFL Efficacy:
  - In California: varies by retail channel (avg range of 55 to 64 l/W)
  - In Comparison Area: varies less by retail channel (avg range of 53 to 58 l/W)

Appendix D

2009 Participant Manufacturer and Corporate-Level Retailer Interview Guides

Program Attribution, Market Effects, and Market Characterization Guide for Reinterviewing Lighting Manufacturers Participating in the 2006-2008 California Upstream Lighting Programs

I. Introduction

A. Contact Protocol

1. Send email invitations to previous interviewees for follow-up interview. This invitation will include:
   a) Explanation of purpose and scope of interview.
   b) Explanation of time frame within which the interview will need to be completed.
   c) Explanation of expected duration of interview and flexibility to complete interview over multiple sessions.
   d) Instructions to propose a convenient interview time.
   e) Contact information for interviewers.
   f) Assurances of confidentiality.
   g) A letter attachment from the CPUC explaining the importance of the interview
   h) A table representing the company's CFL product shipments sales through the Upstream Lighting Program for this time period.
2. If target interviewee does not respond to the email invitation within a week, a follow-up call will be made to try to schedule an interview time, find an alternate interview target, or determine reasons for refusal.

II. Program Participation Confirmation and Reasons for Participation

A. Since we last interviewed you in [month] 2008, have there been any changes in the nature of your participation in the Upstream Lighting Program?

1. [IF YES] What changes were these?

III. 2006-2008 CFL Product Sales and California Upstream Lighting Program Trends

A. We recently received data from the utilities of CFL product shipments through the Upstream Lighting Program for the full 2006-2008 time period. I emailed you a table that represents your company's CFL product shipments sales through the Upstream Lighting Program for this time period. Does this information appear accurate?

1. [IF RESPONDENT QUESTIONS ACCURACY OF DATA, RECORD WHAT ASPECTS OF THE DATA THEY REGARD AS QUESTIONABLE. IF NECESSARY, EXPLAIN WHAT SHIPMENT DATES WERE USED FOR CUTOFF DATES TO DEFINE THE 2006-2008 TIME PERIOD]

B. Have all the Upstream Lighting-Program discounted CFL products that are listed in this table as having been shipped to retailers been sold through?

   1. [IF YES] How do you know this?

   2. [IF YES] About when [TRY TO GET MONTH/YEAR] were all these program-discounted CFLs products sold through?

   3. [IF YES] About when [TRY TO GET MONTH/YEAR] were about 90% of these program-discounted CFL products sold through?

   4. [IF NO] Which of the program-discounted CFL products listed in this table have not sold through?

   5. [IF NO] What happened to these unsold program-discounted CFL products?

Table 1
Sample DataTable

Retail Channel/Product Type	# Non-Specialty CFL Bulbs Through Upstream Lighting Program				# Non-Specialty CFL Bulbs Sold in California Not Through Upstream Lighting Program			
	2006	2007	Q1 2008	Total 2006-2008	2006	2007	Q1 2008	Total 2006-2008
Non-Specialty CFL Bulbs of Type Sold Through Upstream Lighting Program								
Large Home Improvement								
CFL INT INTEGRAL - 13 WATT >= 800 LUMENS - SCREW-IN	50,000	78,000	32,000	**160,000**	A	B	C	D
INTERIOR CF BULB - 23 WATT 1,100 TO 1,399 LUMENS	100,000	213,000	81,000	**394,000**	E	F	G	H
Grocery								
CFL INT INTEGRAL - 13 WATT >= 800 LUMENS - SCREW-IN	60,000	93,600	38,400	**192,000**	I	J	K	L
INTERIOR CF BULB - 23 WATT 1,100 TO 1,399 LUMENS	120,000	255,600	97,200	**472,800**	M	N	O	P
INTERIOR CF BULB - 23 WATT >=1,600 LUMENS	85,000	34,000	56,000	**175,000**	Q	R	S	T
Other Non-Specialty Energy Star CFLs Sold in California But Not Through Upstream Lighting Program								
Channel?								
???								
???								
???								
Channel?								
???								
???								
???								
Non-Specialty Non-Energy Star CFLs Sold in California								
Channel?								
???								
???								
???								
Channel?								
???								
???								
???								

Updating/Verifying Information Regarding Sales of Non-ULP Discounted CFLs

6. When we last interviewed you in [month] 2008, you said that your company [had/ had not] sold non-specialty Energy Star CFL bulbs in California during the 2006-2008 period that did not receive discounts from the Upstream Lighting Program? Has anything changed since our last interview in terms of your sales of non-ULP-discounted Energy Star CFL bulbs?

   a) [IF YES] What has changed?

   b) [IF YES AND SINCE THE LAST INTERVIEW THEY'RE NOW SELLING OR THEY SOLD NON-ULP CFL BULBS WHERE THEY WEREN'T BEFORE] What types of non-specialty Energy Star CFL bulbs are you selling [did you sell] that are not receiving the ULP discounts?

   c) [IF YES AND SINCE THE LAST INTERVIEW THEY'RE NOW SELLING OR THEY SOLD NON-ULP CFL BULBS WHERE THEY WEREN'T BEFORE] What sorts of retail channels are you selling [did you sell] these CFLs through?

   d) [IF YES AND SINCE THE LAST INTERVIEW THEY'RE NOW SELLING OR THEY SOLD NON-ULP CFL BULBS WHERE THEY WEREN'T BEFORE] Why aren't you selling [didn't you sell] these bulbs through the California Upstream Lighting Program?

Updating/Verifying Information Regarding Sales of Non-Energy-Star CFLs

7. When we last interviewed you in [month] 2008, you said that your company [had/ had not] sold non-Energy Star CFL bulbs in California during the 2006-2008 period? Has anything changed since our last interview in terms of your sales of non- Energy Star CFL bulbs?

   a) [IF YES] What has changed?

   b) [IF YES AND SINCE THE LAST INTERVIEW THEY'RE NOW SELLING OR THEY SOLD NON-ENERGY STAR CFL BULBS WHERE THEY WEREN'T BEFORE] What types of non-Energy Star CFL bulbs are you selling?

   c) [IF YES AND SINCE THE LAST INTERVIEW THEY'RE NOW SELLING OR THEY SOLD NON-ENERGY STAR CFL

BULBS WHERE THEY WEREN'T BEFORE] What sorts of retail channels do you sell these non-Energy-Star CFLs through?

d) [IF YES AND SINCE THE LAST INTERVIEW THEY'RE NOW SELLING OR THEY SOLD NON-ENERGY STAR CFL BULBS WHERE THEY WEREN'T BEFORE] Why do you sell these non- Energy-Star CFLs?

Updating/Verifying Information Regarding % of ULP, Non-ULP Energy Star, and Non-Energy Star Sales

8. [IF THEY PROVIDED THIS ESTIMATE] When we last interviewed you in [month] 2008, you provided the following estimate of the % of non-specialty CFL bulbs that you sold in California during the 2006-2008 period that fit into the following categories [READ %s FROM TABLE] Would you want to adjust these estimates in anyway? [IF YES, RECORD CHANGES IN PROPORTIONS AND REASONS WHY RESPONDENT CHANGED PROPORTIONS]
9. [IF THEY DID NOT PROVIDE THIS ESTIMATE IN THE PREVIOUS INTERVIEW, ASK THEM TO ESTIMATE THESE PROPORTIONS THIS TIME AROUND.]

ULP-Discounted % of non-specialty CFL bulbs sold in California during the 2006-2008 period that were ULP-discounted.	__%
Non-ULP Energy Star % of non-specialty CFL bulbs sold in California during the 2006-2008 period that met Energy Star specifications but were not discounted by the program.	__%
Non-Energy Star % of non-specialty CFL bulbs sold in California during the 2006-2008 period that did not meet Energy Star specifications.	__%
Total non-specialty CFL bulbs sold in California during the 2006-2008 period	100%

Effects of Suspension of ULP Incentives/ Effects of Bridge Funding

10. In October 2008 some of the California utility program managers said that they ended financial incentive payments from the Upstream Lighting Program for 2008. What effects did this suspension of incentives have on your sales of CFLs – whether through the Upstream Lighting Program or outside this program?

11. Although the 2009-2011 Upstream Lighting Program has yet to be approved by the California Public Utilities Commission, the Commission has provided the California utilities with "bridge funding" to allow them to pay financial incentives to lighting suppliers in the first half of 2009. What's the current status of your participation in this Upstream Lighting Program? [PROBE FOR STATUS OF ALLOCATION APPLICATIONS, SHIPMENTS TO STORES (VOLUMES, DESTINATIONS)]

Seeking Sales Data for Non-ULP CFLs

12. [IF THEY SOLD NON-SPECIALTY CFLS IN CALIFORNIA IN 2006-2008 THAT DID NOT RECEIVE ULP DISCOUNTS, SAID THAT THEY WOULD PROVIDE THESE DATA IN THE FIRST INTERVIEW, BUT NEVER CAME THROUGH]. When we last interviewed you in [month] 2008, you said that you would provide us with sales data for the CFL products that were not sold through the Upstream Lighting Program, but we never received these data. How can we obtain these non-program CFL sales data?

Specialty CFLs

C. [IF THEY SOLD SPECIALTY CFL BULBS ELSE SKIP TO III. D]. Next I'm going to ask you some similar questions but this time about your sales of specialty CFL bulbs. By "specialty" CFL bulbs I mean bulbs that have special functions or features such as reflectors, dimmability, three-way light levels, or flood lighting. [REPEAT QUESTIONS B1. – B4 EXCEPT SUBSTITUTE WORD "Specialty" for "Non-Specialty"]

CFL Fixtures

D. [IF THEY SOLD CFL FIXTURES ELSE SKIP TO III. E.] Next I'm going to ask you some similar questions but this time about your sales of Energy Star-qualified CFL fixtures. [REPEAT QUESTIONS B1. – B4 EXCEPT SUBSTITUTE WORDS "CFL fixtures" for "Non-Specialty CFL bulbs"]

ULP Trends, Policies

E. Recent trends, policies for the California Upstream Lighting Program

1. Since we last interviewed you in [month] 2008, have there been any changes in the types of CFL bulbs or LED products or compact fluorescent fixtures that the California Upstream Lighting Program has been encouraging your company to sell? [IF NECESSARY, REMIND THEM OF THEIR RESPONSE FROM THE PREVIOUS INTERVIEW]

    a) [IF YES] What have been these changes?

    b) [IF YES] What do you think about these changes?

2. Have you worked with other state, utility, or regional lighting rebate programs besides California's Upstream Lighting Program?

    a) [IF YES] Are there any differences between the California Upstream Lighting Program and these other rebate programs in terms of the types of energy-efficient lighting products they promote?

        a. What are these differences?

        b. The California Upstream Lighting program offers higher rebates for higher lumen levels at a given wattage level. Do any of the other lighting rebate/discount programs you participate in also do this?

            i. [IF YES] Which ones?

    b) [IF YES] Are there any differences between the California Upstream Lighting Program and these other rebate programs in terms of the types of retailers they encourage lighting manufacturers and suppliers to work with?

        a. What are these differences?

3. Does your company sell CFL products in the states of Georgia, Kansas, or Pennsylvania?

    a) [IF YES] Are you familiar with your company's sales of CFL products in these states?

a. [IF YES] In late 2008 we conducted some telephone surveys of residential customers to ask them about their CFL purchasing behavior. These surveys found that residential respondents in Georgia, Kansas, and Pennsylvania were actually reporting a higher level of recent CFL purchases than those in California. They were reporting this even though California has a statewide CFL discount program and these states had no CFL discount programs or very small ones. Do you have any information or theories on why this might be happening?

4. Since we last interviewed you in [month] 2008, have there been any changes in the types of retailers that the California Upstream Lighting Program has been encouraging lighting manufacturers to partner with? [IF NECESSARY, REMIND THEM OF THEIR RESPONSE FROM THE PREVIOUS INTERVIEW]

   a. [IF YES] What have been these changes?

   b. [IF YES] What do you think about these changes?

5. [IF THEY WERE PREVIOUSLY AWARE OF THE BULK PURCHASE LIMITS] Since we last interviewed you in [month] 2008, have there been any changes in what your company is doing to try to enforce these bulk limits?

   a. [IF YES] What have been these changes?

IV. Free Ridership and In-State Spillover for 2006-2008 Upstream Lighting Program

A. [IF THEY SOLD LEDs THROUGH THE ULP PROGRAM, ASK THEM THE SAME FREE RIDERSHIP QUESTIONS THAT WERE ASKED LAST TIME FOR CFL PRODUCTS, ONLY SUBSTITUTING "LED" FOR "CFL" WHERE APPROPRIATE]

B. [ONLY ASK THE CFL PRODUCT FREE RIDERSHIP QUESTIONS IF CFL PRODUCT FREE RIDERSHIP ESTIMATES ARE MISSING FROM THE PREVIOUS INTERVIEW. IN SUCH CASES, USE THE SAME FREE RIDERSHIP QUESTION SEQUENCE FROM THE FULL INTERVIEW GUIDE].

C. Program Effects on Non-discounted CFLs Sold in California in 2006-2008 [ONLY ASK THESE QUESTIONS IF THEY BEGAN SELLING NON-ULP CFL PRODUCTS SINCE THE LAST INTERVIEW. IN SUCH CASES, USE THE SAME QUESTION SEQUENCE FROM THE FULL INTERVIEW GUIDE]

D. .[IF THEY SOLD BOTH SPECIALTY AND NON-SPECIALTY CFLS AND THIS QUESTION WAS NOT ASKED IN THE PREVIOUS INTERVIEW] You said earlier that during the 2006-2008 period, you sold both non-specialty and specialty CFL bulbs through the California Upstream Lighting Program. What effects, if any, do the program-discounted non-specialty CFL bulbs have on your sales levels of program-discounted specialty CFL bulbs, such as dimmable bulbs, bulbs with reflectors, 3-way bulbs, and flood lights? [IF MECHANISM FOR THESE EFFECTS IS NOT EXPLAINED, PROBE FOR MECHANISM]

V. Early, Cumulative Effects of California Lighting Rebate Programs

A. [ONLY ASK QUESTIONS FROM THE PREVIOUS INTERVIEW IF THE PREVIOUS RESPONSES WERE MISSING OR AMBIGUOUS] Have the years of California lighting rebate and discount programs had any effects on the variety of energy-efficient lighting products that you sell?

   1. [IF YES] What have been these effects?

B. [IF THEY SOLD CFLS IN CALIFORNIA BEFORE BECOMING INVOLVED IN THE CALIFORNIA LIGHT REBATE PROGRAMS AND SAID IN THE FIRST INTERVIEW THAT THEY PROVIDE SALES DATA FROM THIS PERIOD, BUT NEVER CAME THROUGH]. When we last interviewed you in [month] 2008, you said that you would provide us with sales data for the CFL products that you sold in California before becoming involved in the California lighting rebate programs. But we never received these data. How can we obtain these pre-program CFL sales data?

C. [IF THEY SOLD CFLS IN STATES WITHOUT LIGHTING REBATE PROGRAMS AND SAID IN THE FIRST INTERVIEW THAT THEY WOULD PROVIDE SALES DATA FROM THIS PERIOD, BUT NEVER CAME THROUGH]. When we last interviewed you in [month] 2008, you said that you would provide us with CFL sales data for the products that you sold in states without lighting rebate programs. But we never received these data. How can we obtain these CFL sales data from states without lighting rebate programs?

D. When we last interviewed you in [month] 2008, we asked you whether the years of California lighting rebate and discount programs have influenced the level of CFL sales in other states. You said [RECAP PREVIOUS RESPONSE]. Has anything happened in recent months that would cause you to change your previous answer?

   1. [IF YES] How would your answer change and why?

Manufacturing Cost/Capacity for Specialty CFLs, LEDs

E. Has your firm experienced any reductions in manufacturing production costs for specialty CFLs over the last five years? By "specialty CFLs" I mean bulbs that have special functions or features such as reflectors, dimmability, three-way light levels, or flood lighting.

1. [IF YES] By how much do you think these reductions in production costs have reduced the average per-bulb prices for specialty CFLs during this ten-year period?

2. [IF YES] What factors have led to these reductions in manufacturing production costs for specialty CFLs?

   a) [IF STATE/UTILITY REBATE PROGRAMS ARE MENTIONED] How did these rebate programs influence these reductions in your manufacturing costs?

   b) [IF STATE/UTILITY REBATE PROGRAMS ARE MENTIONED] In what time period did these rebate programs influence these reductions in your manufacturing costs?

   c) [IF STATE/UTILITY REBATE PROGRAMS ARE MENTIONED] Do you think that the California lighting rebate and discount programs in particular have been an important factor in influencing these reductions in your manufacturing costs for specialty CFLs?

      a. [IF YES] How important a factor were the California lighting rebate programs, in particular, in influencing these reductions in your manufacturing costs? Please use a scale of 0 to 10 where 10 equals "very important" and 0 equals "not important at all."

         i. Why do you give this rating?

            1. [IF INCREASED MANUFACTURING CAPACITY CAUSED BY CALIFORNIA REBATE PROGRAMS MENTIONED] By approximately what % did you increase your manufacturing capacity for specialty CFLs in response to the California rebate programs?

2. [IF INCREASED MANUFACTURING CAPACITY CAUSED BY CALIFORNIA REBATE PROGRAMS MENTIONED] About when did these increases in manufacturing capacity caused by the California rebate programs occur?

3. [IF INCREASED MANUFACTURING CAPACITY CAUSED BY CALIFORNIA REBATE PROGRAMS MENTIONED] By approximately what % did this increase in specialty CFL manufacturing capacity reduce your average CFL production cost?

d) [IF GENERAL INCREASES IN WORLD CFL DEMAND MENTIONED] How important a factor were the California lighting rebate programs, in particular, in increasing demand for these specialty CFL products? Please use a scale of 0 to 10 where 10 equals "very important" and 0 equals "not important at all."

    a. Why do you give that rating?

e) [IF TECHNOLOGICAL IMPROVEMENTS AT THE FACTORY MENTIONED] How important a factor were the California lighting rebate programs, in particular, in driving these technological improvements in the factory for specialty CFLs? Please use a scale of 0 to 10 where 10 equals "very important" and 0 equals "not important at all."

    a. Why do you give that rating?

f) If the California rebate and discount programs went away after 2008 do you think your average production costs for specialty CFLs would go up, would go down, or stay about the same?

    a. Why do you say that?

3. What do think will be the trend for specialty CFL production costs over the next few years. Do you think they'll go up, go down or stay the same?

    a) Why do you say that?

F. [REPEAT QUESTION E. 1-3 FOR LED PRODUCTION IF THEY MANUFACTURE LED PRODUCTS]

G. Has the California Upstream Lighting Program done anything since we last interviewed you in [MONTH] 2008 that has affected the quality or performance of the CFL or LED products that you produce?

1. [IF YES] What has the program done?

H. Last time we named a number of possible drivers of increased CFL bulbs and fixtures and asked you to rate how significant each of these were as a driver of increased CFL product sales during the 2006-2008 period. You were asked to use a 0 to 10 scale, where 0 was not at all significant and 10 was extremely significant. Now I want you to rate these same drivers, but this time focusing on their likely influence on CFL products sales over the next 2-3 years. Please use the same 10-point significance scale.

1. How important will state or utility rebate and discount programs be for CFL product sales over the next 2-3 years? [RECORD RATING]

    a) Why do you give this rating?

2. How about the Energy Star program including its Change-a-Light campaign? [RECORD RATING]

    a) Why do you give this rating?

3. How about CFL promotion campaigns by some large retailers such as Wal-Mart, Home Depot, and Lowe's that will be done independently of any state or utility energy efficiency programs? [RECORD RATING]

    a) Why do you give this rating?

4. How about media stories promoting the use of CFLs? [RECORD RATING]

    a) Why do you give this rating?

5. How about possible reductions in CFL production costs and price points due to lower-cost overseas manufacturing and increases in CFL production capacity? [RECORD RATING]

   a) Why do you give this rating?

6. How about consumer awareness about global warming? [RECORD RATING]

   a) Why do you give this rating?

7. How about possible future increases in energy costs? [RECORD RATING]

   a) Why do you give this rating?

8. Are there any significant drivers of future CFL product sales that I haven't already mentioned?

   a) [IF YES] What are these?

   b) [IF YES] How would you rate these using the 10-point significance scale? [COLLECT A SEPARATE RATING FOR EACH DRIVER MENTIONED]

9. [IF THEY SELL LED PRODUCTS] Your company sells LED lighting products. Would the answers you gave just now for drivers of CFL product sales be any different for LED lighting products?

   a) [IF YES] How so?

I. When we last interviewed you in [month] 2008 you talked about whether you had seen evidence of lighting products receiving discounts from the California Upstream Lighting Program that were being sold out-of-state or through out-of-state buyers through the Internet? Have you seen any additional evidence of this so-called CFL leakage since our last interview?

   1. [IF YES] What new evidence have you seen?

VI. Supply Chain Characterization

A. When we last interviewed you in [month] 2008 we asked you a number of questions about the CFL supply chain such as the amount of time it takes for CFL products to be delivered, how long it takes to sell them through, and what happens to any unsold products. Has anything

happened since our last interview that would cause you to change your answers for any of these questions? [READ BACK SOME OF THE RESPONSES IF NECESSARY]

1. [IF YES] How would your answers change?

VII. Pricing and Incentive Levels

A. When we last interviewed you in [month] 2008 we asked you a number of questions about CFL pricing such as how you estimate your non-discounted CFL prices, how influential retailers are over the pricing of your CFL products, how retailers mark up CFL products, and the differences in retail prices between program-discounted and non-program-discounted CFL products. Has anything happened since our last interview that would cause you to change your answers for any of these questions? [READ BACK SOME OF THE PREVIOUS RESPONSES IF NECESSARY]

   1. [IF YES] How would your answers change?

B. What do you think will be the trend for retail prices for non-specialty CFLs over the next few years? Do you think retail prices for specialty CFLs will go up, go down, or stay about the same?

   1. Why do you say that?

C. What do you think will be the trend for retail prices for specialty CFLs over the next few years? Do you think retail prices for specialty CFLs will go up, go down, or stay about the same?

   1. Why do you say that?

D. If the California utilities wanted to help reduce prices for specialty CFLs over the next few years, what would be the best way for them to leverage their resources to accomplish this?

E. The California Upstream Lighting Program currently offers buydown discounts for specialty CFLs of [CITE MOST RECENT INCENTIVE LEVELS]. Do you think these incentive levels are adequate to move consumer demand for these products?

   1. [IF NO] What buydown discount levels are needed to move consumer demand?

F. What do you think will be the trend for retail prices for CFL fixtures over the next few years? Do you think retail prices for CFL fixtures will go up, go down, or stay about the same?

   1. Why do you say that?

G. What do you think will be the trend for retail prices for LED lighting products over the next few years? Do you think retail prices for LED lighting products will go up, go down, or stay about the same?

   1. Why do you say that?

H. If the California utilities wanted to help reduce prices for LED lighting products over the next few years, what would be the best way for them to leverage their resources to accomplish this?

I. The California Upstream Lighting Program currently offers buydown discounts for LED lighting products of [CITE MOST RECENT INCENTIVE LEVELS]. Do you think these incentive levels are adequate to move consumer demand for these products?

   1. [IF NO] What buydown discount levels are needed to move consumer demand?

VIII. Market Characterization Present and Future

Supply-Side and Demand-Side Barriers

A. When we last interviewed you in [month] 2008 we asked you a number of questions about possible supply-side barriers. These were manufacturing, importing, or distribution factors that might have restricted the production or supply of CFL products. Has anything happened since our last interview that would cause you to change your answers for any of these questions? [READ BACK SOME OF THE PREVIOUS RESPONSES IF NECESSARY]

   1. [IF YES] How would your answers change?

B. When we last interviewed you we asked you a number of questions about possible demand-side barriers. These were factors that might limit customer demand for CFL products? Has anything happened since our last interview that would cause you to change your answers for any of these questions? [READ BACK SOME OF THE PREVIOUS RESPONSES IF NECESSARY]

   1. [IF YES] How would your answers change?

Retailer Cannibalization, Energy Star 4.0, and Expectations for Future CFL Sales

C. [ASK ONLY IF NOT ASKED IN PREVIOUS INTERVIEW] Many discount, grocery stores, and drug stores are participating in the California Upstream Lighting Program that did not sell Energy Star CFLs before joining this program. To what degree do you think these grocery, drug, and discount stores are creating new Energy Star CFL product sales as opposed to taking away Energy Star CFL sales that otherwise would have gone to national chain retailers such as Wal-Mart, Home Depot, or Lowe's?
   1. [IF RESPONDENT INDICATES THESE GROCERY, DRUG, OR DISCOUNT STORES MAY BE TAKING SALES FROM OTHER RETAILERS] Which retailers do you think these grocery, drug, or discount stores are taking Energy Star CFL product sales away from?

D. Energy Star's "CFL Criteria Version 4.0" became effective in December 2008. What do you think has been the impact of these new Energy Star standards on CFL products and prices?

E. What are your expectations for U.S. CFL product sales in 2009 and beyond?

   1. Why do you say that?

F. What are your expectations for international CFL product sales in 2009 and beyond?

   1. Why do you say that?

G. If California eliminated its CFL rebate and discount programs starting in 2009, what effects would this have on the sales levels of CFL products in California?

H. Will manufacturers continue to develop and market CFLs without support from rebate and discount programs?

I. What effects do you think the California Upstream Lighting Program has on the capability and willingness of lighting manufacturers to produce innovative CFL products?

Handicapping the Medium, Screw-Based Lighting Technologies of the Future

J. There is currently discussion as to which types of lighting technology – e.g. CFLs, LEDs, halogens, enhanced incandescents, cathode ray

technologies – will be used in medium screw-based lighting technologies of the future. What is your opinion on this?

K. What do you think are the advantages and disadvantages of CFL technology in terms of being the medium screw-based lighting technology of the future?

L. What do you think are the advantages and disadvantages of LED technology in terms of being the medium screw-based lighting technology of the future?

M. What do you think are the advantages and disadvantages of other possible lighting technologies such as advanced incandescent, halogen, or cathode ray technologies in terms of being the medium screw-based lighting technology of the future?

Assessing the Potential for Super CFLs

N. Before now were you aware that the California utilities along with the California Lighting Technology Center and other partners have developed specifications for a CFL with enhanced features called the Super CFL?

1. [IF YES] What do you know about this effort?

2. [IF NO, OR IF RESPONDENT'S KNOWLEDGE OF SUPER CFL EFFORT IS SLIGHT, PROVIDE INTERVIEWEE WITH SHORT SUMMARY OF SUPER CFL EFFORT AND THE TYPES OF CFL SPECIFICATIONS CURRENTLY BEING CONSIDERED]
3. Based on the description of the Super CFL that I just provided you, what do you think about:
   a) Any potential production barriers – whether technology-related or cost-related – that a product like this might face?

   b) The potential marketability of a product like this?

   c) What kind of price premium that a product like this could command compared to currently-available specialty CFLs?

   d) If those working on the Super CFL were going to limit the CFL features they were trying to enhance to just a few, which CFL features do you think they should focus on?

      a. Why do you say that?

e) Of the CFL features that they are considering for enhancement, which of these do you think has the greatest potential for commanding a price premium in the lighting marketplace?

    a. Why do you say that?

f) I'm going to name a number of CFL specifications or attributes. For each one I name, please let me know if your company is planning any performance improvements over current Energy Star standards for any of your CFL products over the next couple of years [IN EACH CASE WHERE RESPONDENT SAYS A PRODUCT IMPROVEMENT IS PLANNED, PROBE FOR NATURE OF IMPROVEMENT]

    a. Mercury content?

    b. Start-up or run-up times?

    c. Coloring rendering Index (CRI)?

    d. Chromaticity/color temperature?

    e. Acoustic noise or flickering?

    f. Power factor?

    g. Efficacy while dimmed?

    h. Bulb size or shape?

    i. Reflecting capabilities?

g) Are you planning any other enhancements in the quality or performance of your CFL products that we haven't already discussed?

    a. What are these?

h) What factors are driving these planned improvements in the quality or performance of your CFL products? [ATTEMPT TO MATCH FACTORS WITH SPECIFIC PLANNED PRODUCT IMPROVEMENTS]

i) [IF NOT ALREADY MENTIONED] Has the California Upstream Lighting Program played any role in your decision to pursue these product enhancements?

a. [IF YES] What role has it played?

j) How could the California utilities best utilize their resources to facilitate the CFL product improvements that you are planning?

k) How could the California utilities best utilize their resources to facilitate CFL product improvements in general?

IX. CFL Quality, Disposal

A. When we last interviewed you in [month] 2008 you said that you thought the quality of CFL products in recent years has been [INCREASING/DECREASING/STAYING ABOUT THE SAME] Have you seen or heard anything since our last interview that would causes you to change this assessment?

1. [IF YES] What has changed?

B. When we last interviewed you, your preferred policies for the issue of CFL disposal was [RECAP PREVIOUS RESPONSE] Since this last interview have your perspectives on this issue changed?

1. [IF YES] How so?

C. When we last interviewed you, you said that your company was taking the following actions [RECAP PREVIOUS RESPONSE] to encourage environmentally-safe recycling and disposal of CFL products. Since this last interview, has your company taken any new actions in this areas or developed plan to do so?

1. [IF YES] What are these new actions or plans?

X. Program Satisfaction

A. When we last interviewed you in [month] 2008, you provided satisfaction ratings for the California Upstream Lighting Program as a whole as well as a number of program processes. Has anything happened since our last interview that might cause you to change your satisfaction ratings either positively or negatively? [RECAP PREVIOUS SATISFACTION RATINGS IF NECESSARY]

1. [IF YES] What has happened and how would this affect your previous satisfaction rating(s) for the California Upstream Lighting Program?

B. When we last interviewed you in [month] 2008, you provided the following recommendations for improvements for the California Upstream Lighting Program [RECAP RECOMMENDATIONS]. Based on your experience with the program since the last program, are there are recommendations for program improvements that you would like to add?

1. [IF YES] What are these recommendations?

C. Are you planning to participate in the program going forward?

1. [IF NO] Why do you say that?

Program Attribution, Market Effects, and Market Characterization Guide for Reinterviewing Lighting High-Level Retail Buyers Participating in the 2006-2008 California Upstream Lighting Programs

XI. Introduction

A. Contact Protocol

1. Send email invitations to previous interviewees for follow-up interview. This invitation will include:
   a) Explanation of purpose and scope of interview.
   b) Explanation of time frame within which the interview will need to be completed.
   c) Explanation of expected duration of interview and flexibility to complete interview over multiple sessions.
   d) Instructions to propose a convenient interview time.
   e) Contact information for interviewers.
   f) Assurances of confidentiality.
   g) A letter attachment from the CPUC explaining the importance of the interview
   h) A table representing the company's CFL product shipments sales through the Upstream Lighting Program for this time period.
2. If target interviewee does not respond to the email invitation within a week, a follow-up call will be made to try to schedule an interview time, find an alternate interview target, or determine reasons for refusal.

XII. Program Participation Confirmation and Reasons for Participation

A. Since we last interviewed you in [month] 2008, have there been any changes in the nature of your participation in the Upstream Lighting Program?

1. [IF YES] What changes were these?

XIII. 2006-2008 CFL Product Sales and California Upstream Lighting Program Trends

A. We recently received data from the utilities of CFL product shipments through the Upstream Lighting Program for the full 2006-2008 time period. I emailed you a table that represents your company's CFL product shipments sales through the Upstream Lighting Program for this time period. Does this information appear accurate?

1. [IF RESPONDENT QUESTIONS ACCURACY OF DATA, RECORD WHAT ASPECTS OF THE DATA THEY REGARD AS QUESTIONABLE. IF NECESSARY, EXPLAIN WHAT SHIPMENT DATES WERE USED FOR CUTOFF DATES TO DEFINE THE 2006-2008 TIME PERIOD]

B. Have all the Upstream Lighting-Program discounted CFL products that are listed in this table as having been shipped to your stores been sold through?

   1. [IF YES] How do you know this?

   2. [IF YES] About when [TRY TO GET MONTH/YEAR] were all these program-discounted CFLs products sold through?

   3. [IF YES] About when [TRY TO GET MONTH/YEAR] were about 90% of these program-discounted CFL products sold through?

   4. [IF NO] Which of the program-discounted CFL products listed in this table have not sold through?

   5. [IF NO] What happened to these unsold program-discounted CFL products?

Table 2
Sample DataTable

Retail Channel/Product Type	# Non-Specialty CFL Bulbs Through Upstream Lighting Program				# Non-Specialty CFL Bulbs Sold in California Not Through Upstream Lighting Program			
	2006	2007	Q1 2008	Total 2006-2008	2006	2007	Q1 2008	Total 2006-2008
Non-Specialty CFL Bulbs of Type Sold Through Upstream Lighting Program								
Large Home Improvement								
CFL INT INTEGRAL - 13 WATT >= 800 LUMENS - SCREW-IN	50,000	78,000	32,000	**160,000**	A	B	C	D
INTERIOR CF BULB - 23 WATT 1,100 TO 1,399 LUMENS	100,000	213,000	81,000	**394,000**	E	F	G	H
Grocery								
CFL INT INTEGRAL - 13 WATT >= 800 LUMENS - SCREW-IN	60,000	93,600	38,400	**192,000**	I	J	K	L
INTERIOR CF BULB - 23 WATT 1,100 TO 1,399 LUMENS	120,000	255,600	97,200	**472,800**	M	N	O	P
INTERIOR CF BULB - 23 WATT >=1,600 LUMENS	85,000	34,000	56,000	**175,000**	Q	R	S	T
Other Non-Specialty Energy Star CFLs Sold in California But Not Through Upstream Lighting Program								
Channel?								
???								
???								
???								
Channel?								
???								
???								
???								
Non-Specialty Non-Energy Star CFLs Sold in California								
Channel?								
???								
???								
???								
Channel?								
???								
???								
???								

Updating/Verifying Information Regarding Sales of Non-ULP Discounted CFLs

6. When we last interviewed you in [month] 2008, you said that your company [had/ had not] sold non-specialty Energy Star CFL bulbs in California during the 2006-2008 period that did not receive discounts from the Upstream Lighting Program? Has anything changed since our last interview in terms of your sales of non-ULP-discounted Energy Star CFL bulbs?

   a) [IF YES] What has changed?

   b) [IF YES AND SINCE THE LAST INTERVIEW THEY'RE NOW SELLING OR THEY SOLD NON-ULP CFL BULBS WHERE THEY WEREN'T BEFORE] What types of non-specialty Energy Star CFL bulbs are you selling [did you sell] that are not receiving the ULP discounts?

   c) [IF YES AND SINCE THE LAST INTERVIEW THEY'RE NOW SELLING OR THEY SOLD NON-ULP CFL BULBS WHERE THEY WEREN'T BEFORE] Why aren't you selling [didn't you sell] these bulbs through the California Upstream Lighting Program?

Updating/Verifying Information Regarding Sales of Non-Energy-Star CFLs

7. When we last interviewed you in [month] 2008, you said that your company [had/ had not] sold non-Energy Star CFL bulbs in California during the 2006-2008 period? Has anything changed since our last interview in terms of your sales of non- Energy Star CFL bulbs?

   a) [IF YES] What has changed?

   b) [IF YES AND SINCE THE LAST INTERVIEW THEY'RE NOW SELLING OR THEY SOLD NON-ENERGY STAR CFL BULBS WHERE THEY WEREN'T BEFORE] What types of non-Energy Star CFL bulbs are you selling?

   c) [IF YES AND SINCE THE LAST INTERVIEW THEY'RE NOW SELLING OR THEY SOLD NON-ENERGY STAR CFL BULBS WHERE THEY WEREN'T BEFORE] Why do you sell these non- Energy-Star CFLs?

Updating/Verifying Information Regarding % of ULP, Non-ULP Energy Star, and Non-Energy Star Sales

8. [IF THEY PROVIDED THIS ESTIMATE] When we last interviewed you in [month] 2008, you provided the following estimate of the % of non-specialty CFL bulbs that you sold in California during the 2006-2008 period that fit into the following categories [READ %s FROM TABLE] Would you want to adjust these estimates in anyway? [IF YES, RECORD CHANGES IN PROPORTIONS AND REASONS WHY RESPONDENT CHANGED PROPORTIONS]
9. [IF THEY DID NOT PROVIDE THIS ESTIMATE IN THE PREVIOUS INTERVIEW, ASK THEM TO ESTIMATE THESE PROPORTIONS THIS TIME AROUND.]

ULP-Discounted % of non-specialty CFL bulbs sold in California during the 2006-2008 period that were ULP-discounted.	__%
Non-ULP Energy Star % of non-specialty CFL bulbs sold in California during the 2006-2008 period that met Energy Star specifications but were not discounted by the program.	__%
Non-Energy Star % of non-specialty CFL bulbs sold in California during the 2006-2008 period that did not meet Energy Star specifications.	__%
Total non-specialty CFL bulbs sold in California during the 2006-2008 period	100%

Effects of Suspension of ULP Incentives/ Effects of Bridge Funding

10. In October 2008 some of the California utility program managers said that they ended financial incentive payments from the Upstream Lighting Program for 2008. What effects did this suspension of incentives have on your sales of CFLs – whether through the Upstream Lighting Program or outside this program?

11. Although the 2009-2011 Upstream Lighting Program has yet to be approved by the California Public Utilities Commission, the Commission has provided the California utilities with "bridge funding" to allow them to pay financial incentives to lighting suppliers in the first half of 2009. What's the current status of your participation in this Upstream Lighting Program? [PROBE FOR

STATUS OF ALLOCATION APPLICATIONS, SHIPMENTS TO STORES (VOLUMES, DESTINATIONS)]

Seeking Sales Data for Non-ULP CFLs

12. [IF THEY SOLD NON-SPECIALTY CFLS IN CALIFORNIA IN 2006-2008 THAT DID NOT RECEIVE ULP DISCOUNTS, SAID THAT THEY WOULD PROVIDE THESE DATA IN THE FIRST INTERVIEW, BUT NEVER CAME THROUGH]. When we last interviewed you in [month] 2008, you said that you would provide us with sales data for the CFL products that were not sold through the Upstream Lighting Program, but we never received these data. How can we obtain these non-program CFL sales data?

Specialty CFLs

C. [IF THEY SOLD SPECIALTY CFL BULBS ELSE SKIP TO III. D]. Next I'm going to ask you some similar questions but this time about your sales of specialty CFL bulbs. By "specialty" CFL bulbs I mean bulbs that have special functions or features such as reflectors, dimmability, three-way light levels, or flood lighting. [REPEAT QUESTIONS B1. – B4 EXCEPT SUBSTITUTE WORD "Specialty" for "Non-Specialty"]

CFL Fixtures

D. [IF THEY SOLD CFL FIXTURES ELSE SKIP TO III. E.] Next I'm going to ask you some similar questions but this time about your sales of Energy Star-qualified CFL fixtures. [REPEAT QUESTIONS B1. – B4 EXCEPT SUBSTITUTE WORDS "CFL fixtures" for "Non-Specialty CFL bulbs"]

ULP Trends, Policies

E. Recent trends, policies for the California Upstream Lighting Program

1. Since we last interviewed you in [month] 2008, have there been any changes in the types of CFL bulbs or LED products or compact fluorescent fixtures that the California Upstream Lighting Program has been encouraging your company to sell? [IF NECESSARY, REMIND THEM OF THEIR RESPONSE FROM THE PREVIOUS INTERVIEW]

    a) [IF YES] What have been these changes?

    b) [IF YES] What do you think about these changes?

2. Have you worked with other state, utility, or regional lighting rebate programs besides California's Upstream Lighting Program?

    a) [IF YES] Are there any differences between the California Upstream Lighting Program and these other rebate programs in terms of the types of energy-efficient lighting products they promote?

        a. What are these differences?

        b. The California Upstream Lighting program offers higher rebates for higher lumen levels at a given wattage level. Do any of the other lighting rebate/discount programs you participate in also do this?

            i. [IF YES] Which ones?

    b) [IF YES] Are there any differences between the California Upstream Lighting Program and these other rebate programs in terms of the types of retailers they encourage lighting manufacturers and suppliers to work with?

        a. What are these differences?

3. Does your company sell CFL products in the states of Georgia, Kansas, or Pennsylvania?

    a) [IF YES] Are you familiar with your company's sales of CFL products in these states?

        a. [IF YES] In late 2008 we conducted some telephone surveys of residential customers to ask them about their CFL purchasing behavior. These surveys found that residential respondents in Georgia, Kansas, and Pennsylvania were actually reporting a higher level of recent CFL purchases than those in California. They were reporting this even though California has a statewide CFL discount program and these states had no CFL discount programs or very small ones. Do you have any information or theories on why this might be happening?

4. [IF THEY WERE PREVIOUSLY AWARE OF THE BULK PURCHASE LIMITS] Since we last interviewed you in [month] 2008, have there been any changes in what your company is doing to try to enforce these bulk limits?

    a. [IF YES] What have been these changes?

XIV. Free Ridership and In-State Spillover for 2006-2008 Upstream Lighting Program

A. [IF THEY SOLD LEDs THROUGH THE ULP PROGRAM, ASK THEM THE SAME FREE RIDERSHIP QUESTIONS THAT WERE ASKED LAST TIME FOR CFL PRODUCTS, ONLY SUBSTITUTING "LED" FOR "CFL" WHERE APPROPRIATE]

B. [ONLY ASK THE CFL PRODUCT FREE RIDERSHIP QUESTIONS IF CFL PRODUCT FREE RIDERSHIP ESTIMATES ARE MISSING FROM THE PREVIOUS INTERVIEW. IN SUCH CASES, USE THE SAME FREE RIDERSHIP QUESTION SEQUENCE FROM THE FULL INTERVIEW GUIDE].

C. Program Effects on Non-discounted CFLs Sold in California in 2006-2008 [ONLY ASK THESE QUESTIONS IF THEY BEGAN SELLING NON-ULP CFL PRODUCTS SINCE THE LAST INTERVIEW. IN SUCH CASES, USE THE SAME QUESTION SEQUENCE FROM THE FULL INTERVIEW GUIDE]

D. .[IF THEY SOLD BOTH SPECIALTY AND NON-SPECIALTY CFLS AND THIS QUESTION WAS NOT ASKED IN THE PREVIOUS INTERVIEW] You said earlier that during the 2006-2008 period, you sold both non-specialty and specialty CFL bulbs through the California Upstream Lighting Program. What effects, if any, do the program-discounted non-specialty CFL bulbs have on your sales levels of program-discounted specialty CFL bulbs, such as dimmable bulbs, bulbs with reflectors, 3-way bulbs, and flood lights? [IF MECHANISM FOR THESE EFFECTS IS NOT EXPLAINED, PROBE FOR MECHANISM]

XV. Early, Cumulative Effects of California Lighting Rebate Programs

A. [ONLY ASK QUESTIONS FROM THE PREVIOUS INTERVIEW IF THE PREVIOUS RESPONSES WERE MISSING OR AMBIGUOUS] Have the years of California lighting rebate and discount programs had any effects on the variety of energy-efficient lighting products that you sell?

    1. [IF YES] What have been these effects?

B. [IF THEY SOLD CFLS IN CALIFORNIA BEFORE BECOMING INVOLVED IN THE CALIFORNIA LIGHT REBATE PROGRAMS AND SAID IN THE FIRST INTERVIEW THAT THEY PROVIDE SALES DATA FROM THIS PERIOD, BUT NEVER CAME

THROUGH]. When we last interviewed you in [month] 2008, you said that you would provide us with sales data for the CFL products that you sold in California before becoming involved in the California lighting rebate programs. But we never received these data. How can we obtain these pre-program CFL sales data?

C. [IF THEY SOLD CFLS IN STATES WITHOUT LIGHTING REBATE PROGRAMS AND SAID IN THE FIRST INTERVIEW THAT THEY WOULD PROVIDE SALES DATA FROM THIS PERIOD, BUT NEVER CAME THROUGH]. When we last interviewed you in [month] 2008, you said that you would provide us with CFL sales data for the products that you sold in states without lighting rebate programs. But we never received these data. How can we obtain these CFL sales data from states without lighting rebate programs?

D. When we last interviewed you in [month] 2008, we asked you whether the years of California lighting rebate and discount programs have influenced the level of CFL sales in other states. You said [RECAP PREVIOUS RESPONSE]. Has anything happened in recent months that would cause you to change your previous answer?

   1. [IF YES] How would your answer change and why?

Manufacturing Cost/Capacity for Specialty CFLs, LEDs [FOR RETAILERS, ASK IF THEY KNOW ANYTHING ABOUT MANUFACTURING COSTS FOR CFL, IF NO, SKIP THIS SECTION]

E. Has your firm experienced any reductions in manufacturing production costs for specialty CFLs over the last five years? By "specialty CFLs" I mean bulbs that have special functions or features such as reflectors, dimmability, three-way light levels, or flood lighting.

   1. [IF YES] By how much do you think these reductions in production costs have reduced the average per-bulb prices for specialty CFLs during this ten-year period?

   2. [IF YES] What factors have led to these reductions in manufacturing production costs for specialty CFLs?

      a) [IF STATE/UTILITY REBATE PROGRAMS ARE MENTIONED] How did these rebate programs influence these reductions in your manufacturing costs?

      b) [IF STATE/UTILITY REBATE PROGRAMS ARE MENTIONED] In what time period did these rebate programs influence these reductions in your manufacturing costs?

c) [IF STATE/UTILITY REBATE PROGRAMS ARE MENTIONED] Do you think that the California lighting rebate and discount programs in particular have been an important factor in influencing these reductions in your manufacturing costs for specialty CFLs?

   a. [IF YES] How important a factor were the California lighting rebate programs, in particular, in influencing these reductions in your manufacturing costs? Please use a scale of 0 to 10 where 10 equals "very important" and 0 equals "not important at all."

      i. Why do you give this rating?

         1. [IF INCREASED MANUFACTURING CAPACITY CAUSED BY CALIFORNIA REBATE PROGRAMS MENTIONED] By approximately what % did you increase your manufacturing capacity for specialty CFLs in response to the California rebate programs?

         2. [IF INCREASED MANUFACTURING CAPACITY CAUSED BY CALIFORNIA REBATE PROGRAMS MENTIONED] About when did these increases in manufacturing capacity caused by the California rebate programs occur?

         3. [IF INCREASED MANUFACTURING CAPACITY CAUSED BY CALIFORNIA REBATE PROGRAMS MENTIONED] By approximately what % did this increase in specialty CFL manufacturing capacity reduce your average CFL production cost?

d) [IF GENERAL INCREASES IN WORLD CFL DEMAND MENTIONED] How important a factor were the California

lighting rebate programs, in particular, in increasing demand for these specialty CFL products? Please use a scale of 0 to 10 where 10 equals "very important" and 0 equals "not important at all."

a. Why do you give that rating?

e) [IF TECHNOLOGICAL IMPROVEMENTS AT THE FACTORY MENTIONED] How important a factor were the California lighting rebate programs, in particular, in driving these technological improvements in the factory for specialty CFLs? Please use a scale of 0 to 10 where 10 equals "very important" and 0 equals "not important at all."

a. Why do you give that rating?

f) If the California rebate and discount programs went away after 2008 do you think your average production costs for specialty CFLs would go up, would go down, or stay about the same?

a. Why do you say that?

3. What do think will be the trend for specialty CFL production costs over the next few years. Do you think they'll go up, go down or stay the same?

a) Why do you say that?

F. [REPEAT QUESTION E. 1-3 FOR LED PRODUCTION IF THEY MANUFACTURE LED PRODUCTS]

G. Has the California Upstream Lighting Program done anything since we last interviewed you in [MONTH] 2008 that has affected the quality or performance of the CFL or LED products that you sell?

1. [IF YES] What has the program done?

H. Last time we named a number of possible drivers of increased CFL bulbs and fixtures and asked you to rate how significant each of these were as a driver of increased CFL product sales during the 2006-2008 period. You were asked to use a 0 to 10 scale, where 0 was not at all significant and 10 was extremely significant. Now I want you to rate these same drivers, but this time focusing on their likely influence on CFL products sales over the next 2-3 years. Please use the same 10-point significance scale.

1. How important will state or utility rebate and discount programs be for CFL product sales over the next 2-3 years? [RECORD RATING]

   a) Why do you give this rating?

2. How about the Energy Star program including its Change-a-Light campaign? [RECORD RATING]

   a) Why do you give this rating?

3. How about CFL promotion campaigns by some large retailers such as Wal-Mart, Home Depot, and Lowe's that will be done independently of any state or utility energy efficiency programs? [RECORD RATING]

   a) Why do you give this rating?

4. How about media stories promoting the use of CFLs? [RECORD RATING]

   a) Why do you give this rating?

5. How about possible reductions in CFL production costs and price points due to lower-cost overseas manufacturing and increases in CFL production capacity? [RECORD RATING]

   a) Why do you give this rating?

6. How about consumer awareness about global warming? [RECORD RATING]

   a) Why do you give this rating?

7. How about possible future increases in energy costs? [RECORD RATING]

   a) Why do you give this rating?

8. Are there any significant drivers of future CFL product sales that I haven't already mentioned?

   a) [IF YES] What are these?

   b) [IF YES] How would you rate these using the 10-point significance scale? [COLLECT A SEPARATE RATING FOR EACH DRIVER MENTIONED]

9. [IF THEY SELL LED PRODUCTS] Your company sells LED lighting products. Would the answers you gave just now for drivers of CFL product sales be any different for LED lighting products?

    a) [IF YES] How so?

I. When we last interviewed you in [month] 2008 you talked about whether you had seen evidence of lighting products receiving discounts from the California Upstream Lighting Program that were being sold out-of-state or through out-of-state buyers through the Internet? Have you seen any additional evidence of this so-called CFL leakage since our last interview?

1. [IF YES] What new evidence have you seen?

XVI. Supply Chain Characterization

A. When we last interviewed you in [month] 2008 we asked you a number of questions about the CFL supply chain such as the amount of time it takes for CFL products to be delivered, how long it takes to sell them through, and what happens to any unsold products. Has anything happened since our last interview that would cause you to change your answers for any of these questions? [READ BACK SOME OF THE RESPONSES IF NECESSARY]

1. [IF YES] How would your answers change?

XVII. Pricing and Incentive Levels

A. When we last interviewed you in [month] 2008 we asked you a number of questions about CFL pricing such as how you mark up CFL products, and the differences in retail prices between program-discounted and non-program-discounted CFL products. Has anything happened since our last interview that would cause you to change your answers for any of these questions? [READ BACK SOME OF THE PREVIOUS RESPONSES IF NECESSARY]

1. [IF YES] How would your answers change?

B. What do you think will be the trend for retail prices for non-specialty CFLs over the next few years? Do you think retail prices for specialty CFLs will go up, go down, or stay about the same?

   1. Why do you say that?

C. What do you think will be the trend for retail prices for specialty CFLs over the next few years? Do you think retail prices for specialty CFLs will go up, go down, or stay about the same?

   1. Why do you say that?

D. If the California utilities wanted to help reduce prices for specialty CFLs over the next few years, what would be the best way for them to leverage their resources to accomplish this?

E. The California Upstream Lighting Program currently offers buydown discounts for specialty CFLs of [CITE MOST RECENT INCENTIVE LEVELS]. Do you think these incentive levels are adequate to move consumer demand for these products?

   1. [IF NO] What buydown discount levels are needed to move consumer demand?

F. What do you think will be the trend for retail prices for CFL fixtures over the next few years? Do you think retail prices for CFL fixtures will go up, go down, or stay about the same?

   1. Why do you say that?

G. What do you think will be the trend for retail prices for LED lighting products over the next few years? Do you think retail prices for LED lighting products will go up, go down, or stay about the same?

   1. Why do you say that?

H. If the California utilities wanted to help reduce prices for LED lighting products over the next few years, what would be the best way for them to leverage their resources to accomplish this?

I. The California Upstream Lighting Program currently offers buydown discounts for LED lighting products of [CITE MOST RECENT INCENTIVE LEVELS]. Do you think these incentive levels are adequate to move consumer demand for these products?

1. [IF NO] What buydown discount levels are needed to move consumer demand?

XVIII. Market Characterization Present and Future

Supply-Side and Demand-Side Barriers

A. When we last interviewed you in [month] 2008 we asked you a number of questions about possible supply-side barriers. These were manufacturing, importing, or distribution factors that might have restricted the production or supply of CFL products. Has anything happened since our last interview that would cause you to change your answers for any of these questions? [READ BACK SOME OF THE PREVIOUS RESPONSES IF NECESSARY]

1. [IF YES] How would your answers change?

B. When we last interviewed you we asked you a number of questions about possible demand-side barriers. These were factors that might limit customer demand for CFL products? Has anything happened since our last interview that would cause you to change your answers for any of these questions? [READ BACK SOME OF THE PREVIOUS RESPONSES IF NECESSARY]

1. [IF YES] How would your answers change?

Retailer Cannibalization, Energy Star 4.0, and Expectations for Future CFL Sales

C. [ASK ONLY IF NOT ASKED IN PREVIOUS INTERVIEW] Many discount, grocery stores, and drug stores are participating in the California Upstream Lighting Program that did not sell Energy Star CFLs before joining this program. To what degree do you think these grocery, drug, and discount stores are creating new Energy Star CFL product sales as opposed to taking away Energy Star CFL sales that otherwise would have gone to national chain retailers such as Wal-Mart, Home Depot, or Lowe's?

1. [IF RESPONDENT INDICATES THESE GROCERY, DRUG, OR DISCOUNT STORES MAY BE TAKING SALES FROM OTHER RETAILERS] Which retailers do you think these grocery, drug, or discount stores are taking Energy Star CFL product sales away from?

D. Energy Star's "CFL Criteria Version 4.0" became effective in December 2008. What do you think has been the impact of these new Energy Star standards on CFL products and prices?

E. What are your expectations for U.S. CFL product sales in 2009 and beyond?

   1. Why do you say that?

F. What are your expectations for international CFL product sales in 2009 and beyond?

   1. Why do you say that?

G. If California eliminated its CFL rebate and discount programs starting in 2009, what effects would this have on the sales levels of CFL products in California?

H. Will manufacturers continue to develop and market CFLs without support from rebate and discount programs?

I. What effects do you think the California Upstream Lighting Program has on the capability and willingness of lighting manufacturers to produce innovative CFL products?

Handicapping the Medium, Screw-Based Lighting Technologies of the Future

J. There is currently discussion as to which types of lighting technology – e.g. CFLs, LEDs, halogens, enhanced incandescents, cathode ray technologies – will be used in medium screw-based lighting technologies of the future. What is your opinion on this?

K. What do you think are the advantages and disadvantages of CFL technology in terms of being the medium screw-based lighting technology of the future?

L. What do you think are the advantages and disadvantages of LED technology in terms of being the medium screw-based lighting technology of the future?

M. What do you think are the advantages and disadvantages of other possible lighting technologies such as advanced incandescent, halogen, or cathode ray technologies in terms of being the medium screw-based lighting technology of the future?

Assessing the Potential for Super CFLs

N. Before now were you aware that the California utilities along with the California Lighting Technology Center and other partners have developed specifications for a CFL with enhanced features called the Super CFL?

1. [IF YES] What do you know about this effort?

2. [IF NO, OR IF RESPONDENT'S KNOWLEDGE OF SUPER CFL EFFORT IS SLIGHT, PROVIDE INTERVIEWEE WITH SHORT SUMMARY OF SUPER CFL EFFORT AND THE TYPES OF CFL SPECIFICATIONS CURRENTLY BEING CONSIDERED]

3. Based on the description of the Super CFL that I just provided you, what do you think about:
   a) Any potential production barriers – whether technology-related or cost-related – that a product like this might face?

   b) The potential marketability of a product like this?

   c) What kind of price premium that a product like this could command compared to currently-available specialty CFLs?

   d) If those working on the Super CFL were going to limit the CFL features they were trying to enhance to just a few, which CFL features do you think they should focus on?

      a. Why do you say that?

   e) Of the CFL features that they are considering for enhancement, which of these do you think has the greatest potential for commanding a price premium in the lighting marketplace?

      a. Why do you say that?

   f) I'm going to name a number of CFL specifications or attributes. For each one I name, please let me know if your company is planning any performance improvements over current Energy Star standards for any of your CFL products over the next couple of years [IN EACH CASE WHERE RESPONDENT SAYS A PRODUCT IMPROVEMENT IS PLANNED, PROBE FOR NATURE OF IMPROVEMENT]

a. Mercury content?

b. Start-up or run-up times?

c. Coloring rendering Index (CRI)?

d. Chromaticity/color temperature?

e. Acoustic noise or flickering?

f. Power factor?

g. Efficacy while dimmed?

h. Bulb size or shape?

i. Reflecting capabilities?

g) Are you planning any other enhancements in the quality or performance of your CFL products that we haven't already discussed?

a. What are these?

h) What factors are driving these planned improvements in the quality or performance of your CFL products? [ATTEMPT TO MATCH FACTORS WITH SPECIFIC PLANNED PRODUCT IMPROVEMENTS]

i) [IF NOT ALREADY MENTIONED] Has the California Upstream Lighting Program played any role in your decision to pursue these product enhancements?

a. [IF YES] What role has it played?

j) How could the California utilities best utilize their resources to facilitate the CFL product improvements that you are planning?

k) How could the California utilities best utilize their resources to facilitate CFL product improvements in general?

XIX. CFL Quality, Disposal

A. When we last interviewed you in [month] 2008 you said that you thought the quality of CFL products in recent years has been

[INCREASING/DECREASING/STAYING ABOUT THE SAME] Have you seen or heard anything since our last interview that would causes you to change this assessment?

1. [IF YES] What has changed?

B. When we last interviewed you, your preferred policies for the issue of CFL disposal was [RECAP PREVIOUS RESPONSE] Since this last interview have your perspectives on this issue changed?

1. [IF YES] How so?

C. When we last interviewed you, you said that your company was taking the following actions [RECAP PREVIOUS RESPONSE] to encourage environmentally-safe recycling and disposal of CFL products. Since this last interview, has your company taken any new actions in this areas or developed plan to do so?

1. [IF YES] What are these new actions or plans?

XX. Program Satisfaction

A. When we last interviewed you in [month] 2008, you provided satisfaction ratings for the California Upstream Lighting Program as a whole as well as a number of program processes. Has anything happened since our last interview that might cause you to change your satisfaction ratings either positively or negatively? [RECAP PREVIOUS SATISFACTION RATINGS IF NECESSARY]

1. [IF YES] What has happened and how would this affect your previous satisfaction rating(s) for the California Upstream Lighting Program?

B. When we last interviewed you in [month] 2008, you provided the following recommendations for improvements for the California Upstream Lighting Program [RECAP RECOMMENDATIONS]. Based on your experience with the program since the last program, are there are recommendations for program improvements that you would like to add?

1. [IF YES] What are these recommendations?

C. Are you planning to participate in the program going forward?

1. [IF NO] Why do you say that?

Appendix E

2009 Participant Manufacturer and Corporate-Level Retailer Interview Findings

Appendix E: 2009 Updates to Participant Manufacturer and Corporate-Level Retailer Interview Findings

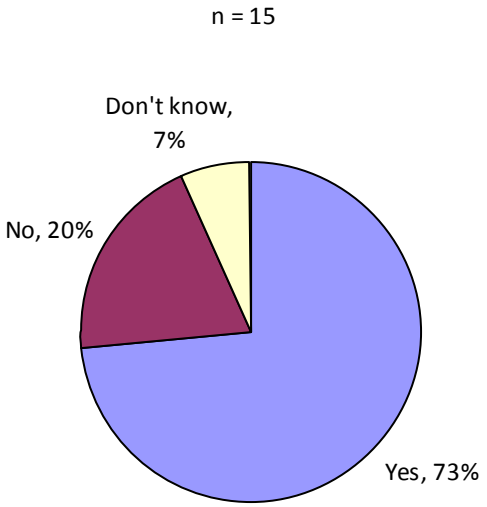
1. SPECIALTY CFLS

In the 2009–2011 cycle of the California Upstream Lighting Programs (ULPs), the participating utilities plan to place greater emphasis on providing incentives for so-called "specialty" CFLs.[1] For this reason the 2009 survey of participating manufacturers and corporate-level retailers focused on trends in specialty CFL production costs, the role that the ULPs played in these cost trends, and the likely direction of these costs if the ULPs were to end.

1.1 Trends in Specialty CFL Production Costs

We asked the lighting manufacturers/importers whether they had experienced any reduction in manufacturing production costs for specialty CFLs over the last five years. Figure 1, below, shows that about three-quarters of the manufacturers/importers reported a reduction in their specialty CFL production costs during this period.[2] Eight of them also provided estimates of their production cost decreases, ranging from 3% to 45%, with a mean of 18%.

Figure 1. Have Specialty CFL Production Costs Declined Over the Last Five Years? (Participant Manufacturer/Importer Interviews)



[1] For the purposes of the upstream market actor surveys, specialty CFLs were defined as CFLs that have "special functions or features such as reflectors, dimmability, three-way light levels, or flood lighting." Note, however, that "specialty CFLs" has other definitions in other contexts. For example, the broadest definition would include *any* CFLs that are not spirals or mini-spirals. Under this broader definition CFLs such as A-lamps or globes would be also be considered specialty CFLs, even though they differ from spirals and mini-spirals only in their form.

[2] Two of the manufacturer/importer representatives said production costs had remained fairly level during this period, and the third said they had actually risen.

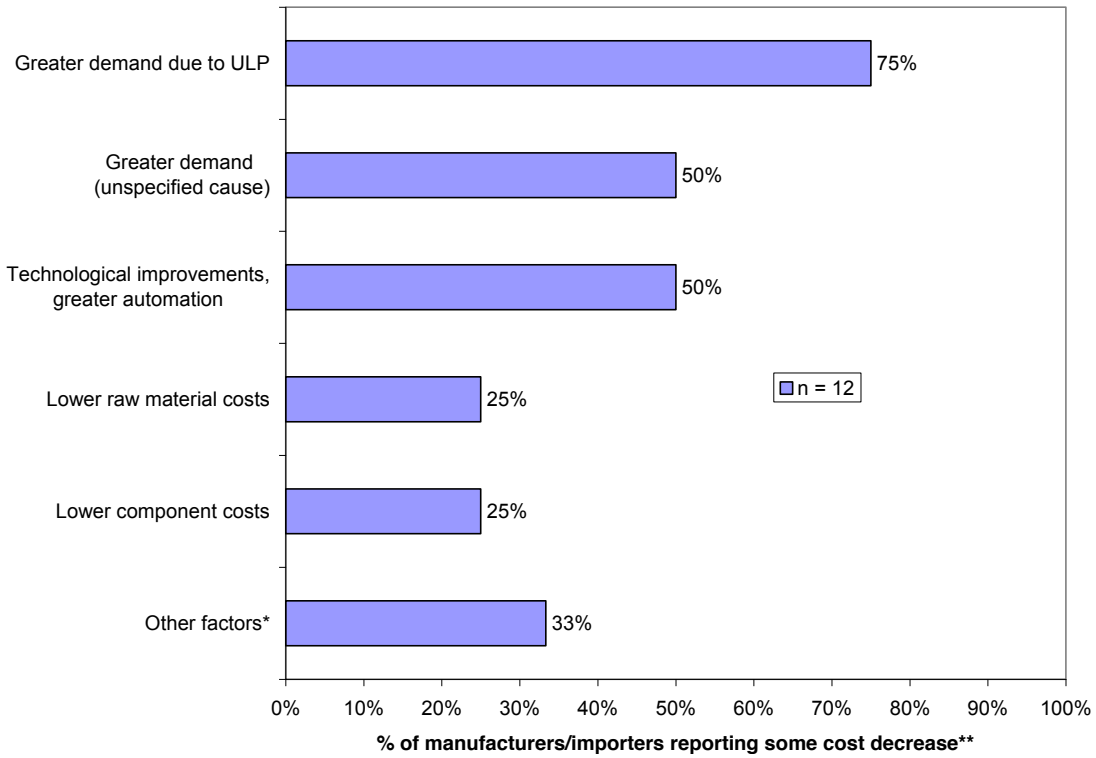
We also asked the manufacturers/importers about the factors that contributed to decreases in their specialty CFL production costs. Figure 2, below, shows three-quarters of the respondents cited as a factor in their cost decreases the increased consumer demand for specialty CFLs generated by the ULPs . In addition, some manufacturers/importers attributed other cost-reduction factors to the ULPs. For example, a number of them credited their company's technological improvements and increased automation to the ULPs' efforts to increase demand for specialty CFLs. Representative quotes include:

> *"Once a factory knows there's a demand for a specific product, they will spend more money in investment to work on those projects. So if they see a demand for a specific A-lamp or globe or dimmable, then they will spend more effort to work on those items."*

> *"The more [the California IOUs] encourage the specialties, we have a stronger voice through the factory to having more R&D on the specialties and it brings down the cost also. But, again, it really depends on how much volume we can move for the specialties."*

> *"Because of the [specialty CFL] volume ... it allows us to automate more."*

Figure 2. Factors that Led to Reductions in Specialty CFL Production Costs (Manufacturer/Importer Interviews **)



Notes:

*Other factors included the specialty CFLs benefiting from increases in factory production scale that were designed to meet the bare spiral CFL market, increased competition among manufacturers, manufacturers cutting margins to help boost sales volumes during the current economic downturn, and retail experts within lighting manufacturers urging their factory managers to find ways to reduce production costs to bring down the specialty CFL price point.

**The base includes 11 manufacturers/importers who reported a net decrease in production costs over the five-year period and a twelfth who said that while his company experienced reductions in production costs due to greater economies of scale, these were offset by higher energy costs resulting in no net decrease.

To get a sense of the relative importance of the ULP-driven cost-reduction factors, we asked those who had mentioned the ULPs as a factor to rate their importance on a 0-to-10 scale, where 10 equaled "very important" and 0 equaled "not important at all." The average rating (n=8) was 6.8. Respondents who gave higher importance ratings explained they did so because ULP-driven sales accounted for a large percentage of their specialty CFL sales. Respondents who gave lower ratings said that ULP-driven specialty CFL sales did not account for a large percentage of their sales or that other cost reduction factors—such as lower input costs due to the slow economy—diluted the importance of the ULPs' effects.

1.2 Sustainability of Specialty CFL Production Cost Reductions in the Absence of the ULPs

To explore whether recent reductions in specialty CFL production costs would be sustainable if the ULPs were no longer offered, we grouped the cost-reduction factors mentioned above into four categories[3]:

1. *Factors resulting from the recent economic downturn.* These included reductions in CFL raw material and component costs that respondents attributed to the slower economy. They also included manufacturers cutting margins to help boost sales volumes during the economic downturn. Finally, although not a manufacturing cost per se, the cost of shipping CFLs from Asia has declined significantly due to the poor economy, according to a couple of the manufacturers/importers.
2. *Factors resulting from normal competition.* A number of respondents noted that normal competitive pressures not only encourage manufacturers to cut margins but also can spur technological innovations that may cut production costs.
3. *Factors resulting from rebate program-driven demand.* This includes the cost reduction factors (discussed previously) from ULP-driven demand as well as those driven by other state or utility CFL rebate/buy-down programs.
4. *Factors resulting from growing consumer awareness/familiarity with specialty CFLs.* Some growth in consumer demand for specialty CFLs is occurring even when rebates are not available due to marketing and consumer education efforts that are independent of rebate programs.

Eliminating the ULPs might affect each of these factors in a variety of ways.

1. *Factors resulting from the recent economic downturn.* This category of cost reduction appears to be the most independent of the ULP, since it is primarily influenced by the

[3] There is general agreement among market actors that the higher price point for specialty CFL products is hindering their sales. For example, a 2008 survey of 48 store managers who represented ULP participant stores selling specialty CFL in PG&E and SCE service areas found price to be the most cited barrier to specialty CFL sales.

timing of the economic recovery. In fact when we later asked the participating market actors where they saw specialty CFL production costs going over the next two to three years, those who thought that production costs would increase pointed to increases in the costs of raw materials, components, and energy due to the inflationary effects of a more robust economy.

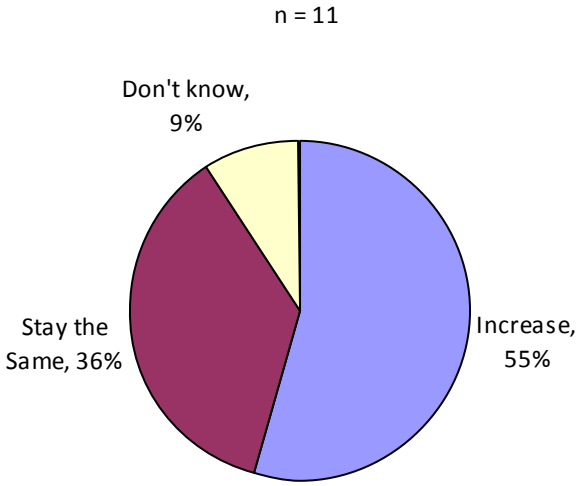
2. *Factors resulting from normal competition.* At first glance this category of cost reduction—factors resulting from normal competition—would also appear to function independently of the existence of the ULP. However, while some degree of competition would certainly continue in the CFL marketplace if the ULP went away, there would likely be less competition. In both the 2008 and 2009 surveys we asked the upstream market actors: "Will manufacturers continue to develop and market CFLs without support from rebate and discount programs?" Their responses were similar in both rounds of the survey. Almost all manufacturers said they thought some manufacturers would continue to develop and market CFLs, although many indicated there would be significant changes in market dynamics. For example, they said it would be very difficult for some of the smaller manufacturers to continue without the rebate programs. Some of the smaller manufacturers confirmed this by saying they would either go out of business or see sharp declines in sales if the rebate programs were eliminated or significantly scaled back.
3. *Factors resulting from rebate program-driven demand.* It is obvious that the elimination of the ULP program would significantly reduce rebate-driven sales of specialty CFLs in California. Although non-IOU California rebate programs might continue, these programs are much smaller than the ULP. A number of upstream market actors did point out that the increase in CFL rebate programs outside of California. However, as discussed elsewhere in this section, a large majority of the upstream market actors thought that the California CFL sales in general would decrease significantly in the absence of the program. This implies that they would consider any spillover benefits in California from the new non-California rebate programs to be very minimal.
4. *Factors resulting from growing consumer awareness/familiarity with specialty CFLs.* There are a number of CFL marketing and education campaigns that are not part of the ULP. These include the California Flex Your Power program, ENERGY STAR's Change-a-Light campaign, and other campaigns such as the intense multimedia campaign that PG&E conducted during the summers of 2007 and 2008. PG&E's campaign, in particular, focused on educating consumers about recent improvement in CFL design and performance—including specialty CFLs. However, many of these promotional and educational campaigns are timed to coincide with the availability of CFL rebates, and it is uncertain whether they would be conducted as frequently if these rebates were no longer available.

We asked manufacturers/importers about their expectations for trends in average specialty CFL production costs were the ULPs to be discontinued after 2009. Figure 3, below, shows that slightly more than half the respondents said their production costs would increase in the absence of the programs. Most said that this was because reduced specialty CFL sales volume would result in lost economies of scale at their factories. One of them also pointed out that in addition to the lost efficiencies of larger production runs, reduced sales volume would also increase their costs for raw materials and components since they would lose some of their volume discounts.

The figure also shows that more than one-third of the manufacturers/importers said their specialty CFL production costs would remain the same if California CFL rebate/buy-downs were no longer offered after 2009. For this group of respondents the reasons were more varied and included:

- Factory labor levels would be reduced in proportion to the lost sales volume.
- Prices would not increase, especially during the current economic downturn, because the demand for specialty CFLs is currently too low.
- The California ULPs account for only a small percentage of total sales volume.

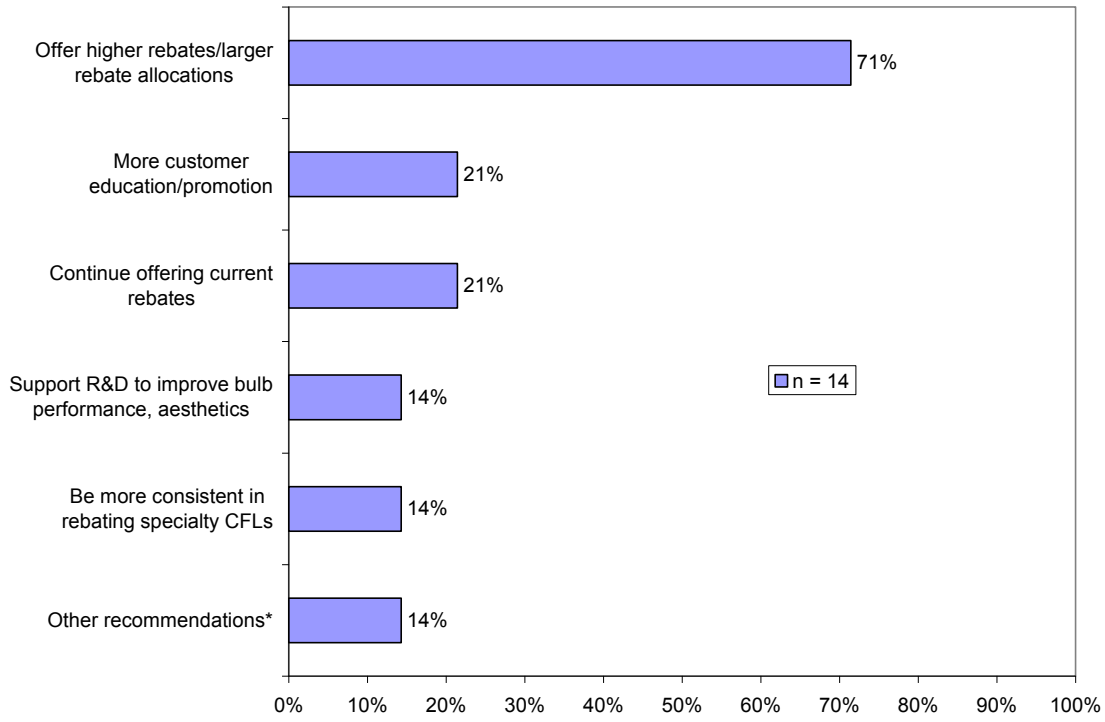
Figure 3. Expected Changes in Specialty CFL Production Costs in the Absence of the ULP (Manufacturer/Importer Interviews)



1.3 Recommendations for Specialty CFL Retail Price Reductions

We also asked the manufacturers/importers and the high-level retail buyers: "If the California utilities wanted to help reduce prices for specialty CFLs over the next few years, what would be the best way for them to leverage their resources to accomplish this?" Nearly three-quarters of the respondents thought current rebate levels for specialty CFLs should be increased or the size of rebate allocation for specialty CFLs should be increased (Figure 4, below). Very few respondents offered other recommendations, such as increased customer education or additional R&D support.

Figure 4. Recommended Means of Reducing Specialty CFL Retail Prices
(Manufacturer/Importer Interviews)

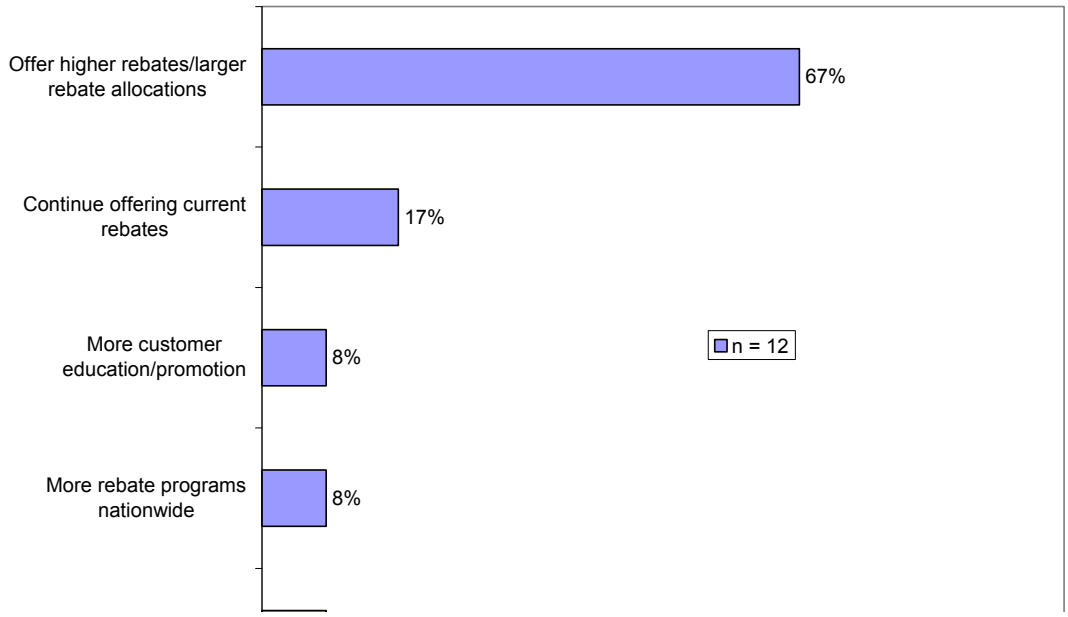


Note: *Other recommendations included not reducing rebate levels for big box retail stores and allowing more flexibility in the ULP participation requirements.

Because participant manufacturers/importers directly benefit from increases in the rebate levels and allocation amounts, these recommendations should be considered with that bias in mind. However, the fact that a large majority of the manufacturers/importers claim that current rebate levels and allocation are too low is a strong indication that they do not think the California specialty CFL market can sustain itself without rebate support. In fact, some manufacturers argued that continuing rebate support for specialty CFLs in the short term could help lead to a more self-sustaining market. "The rebates help the consumers try the product," said one manufacturer. "And with that opportunity, if they see success in it, then maybe, down the road, they will be more willing to buy the product at a higher price point, even if it's not rebatable anymore because they know that they're going to get what it stated it's going to do—save them money and save them energy."

In addition, the participant corporate-level retailers (buyers), whose companies get less direct benefit from the ULPs' rebates than do participant manufacturers/importers, also thought higher rebates would be the best way for the California IOUs to reduce specialty CFL price points. The retailers' recommendations are shown below in Figure 5.

Figure 5. Recommended Means of Reducing Specialty CFL Retail Prices (Corporate-Level Retailer/Buyer Interviews)



2. Influence of the CFL Rebate/Buy-Down Programs Relative to Other CFL Market Drivers

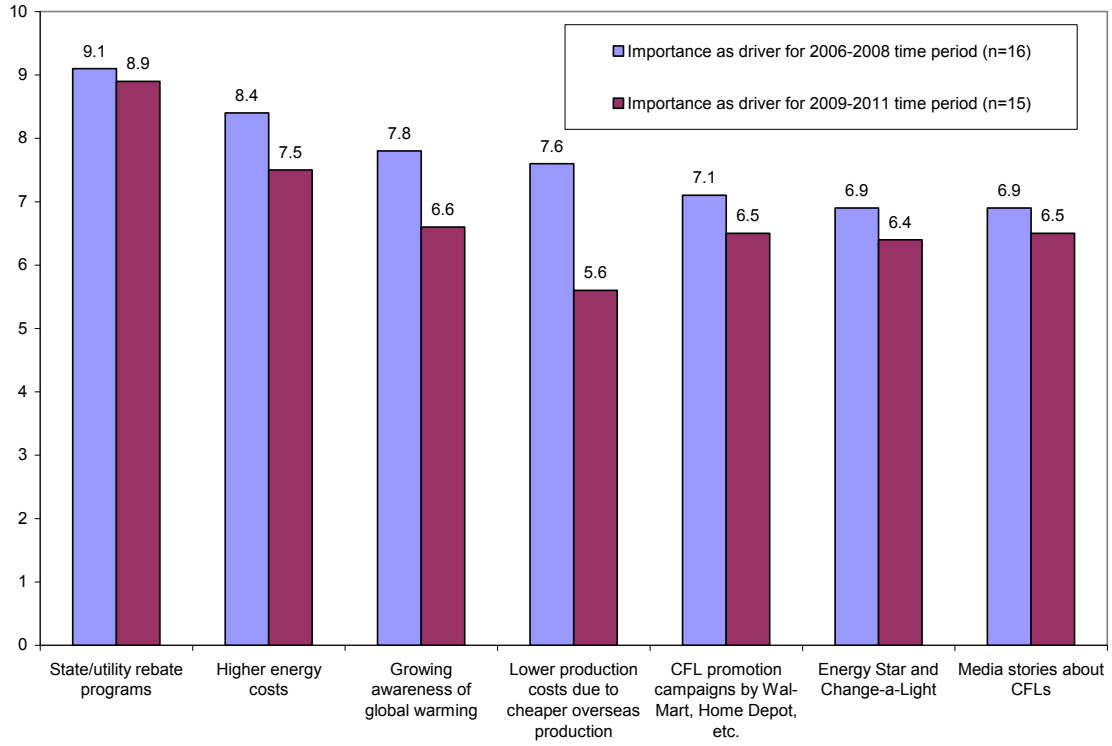
The CFL Market Effects Team wanted to compare the importance participants placed on California ULPs to the importance they placed on other market drivers of CFL sales. To do so, we identified a number of other possible drivers and, in the 2008 interviews, asked manufacturers/importers and corporate-level retailers to rate the significance of those drivers using a 0-to-10 scale (where 10 indicated "extremely significant" and 0 indicated "not significant at all)."[4] The manufacturers/importers and retailers gave rebate programs the highest significance ratings and higher energy costs the second highest ratings.

In the 2009 participant market actor interviews, we asked manufacturers/importers and corporate-level retailers to rate the significance of the same set of CFL market drivers for the 2009–2011 time period. Figure 6, below, shows that the manufacturers/importers saw the significance of all the market drivers declining in the 2009–2011 period. This is likely due to expectations about growing consumer acceptability of CFLs and the expected effects of the federal lighting efficacy regulations. Of all the market drivers, the state/rebate program driver

[4] The Team did not randomize the listing of the possible CFL drivers. Nonetheless, we did not observe any relation between the order in which the drivers were asked (see note with figure) and the ratings they received.

saw the smallest decline in its importance rating. This indicates that manufacturers/importers believed the phase-out of CFL rebates programs would be premature.

Figure 6. Significance Ratings of CFL Market Drivers:
2006-2008 vs. 2009-2011 Program Periods
(Manufacturer/Importer Interviews)



Reasons cited for the declining importance of the major retailer promotional campaigns included claims that these national retailers are not promoting CFLs as aggressively as they had in the recent past. "Its importance is waning. You know, if you look at someone like Wal-Mart, they're going to focus on the categories that are drivers, right now. So when CFLs were hot in 2007 and the first half of 2008 they were promoting the heck out of them," said one lighting manufacturer. "If you've gone into their stores over 2009, you can barely find an end cap or a pallet full of them. So they're not going to put as much emphasis on it, because they see that decline, because they realize it is no longer a hot item," stated another. Other respondents questioned how often the national retailer promotional campaigns are conducted independently of support from state or utility CFL rebates. "Most of the regular programs that a Home Depot or Lowe's do in certain areas, those sales are pushed by the utility rebates," said another lighting manufacturer. "It's never by itself."

The manufacturers/importers said the declining importance they placed on lower production costs by explaining:

- Production costs cannot get much lower without sacrificing quality.
- The current weak economy cannot sustain further increases in CFL production capacity and currently there is excess capacity.
- Tougher CFL requirements, such as the recent U.S. ENERGY STAR . version 4.0 specifications and the European Union's Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2008 (RoHS), will make it more expensive to produce CFLs.
- Labor costs in China, where most CFLs are manufactured, are increasing and new currency exchanges rules with China will raise CFL import costs.

Figure 7 shows a similar comparison from the perspective of the participating corporate-level retail buyers. For the 2009-2011 time period, the high-level retail buyers' importance ratings were similar to those of the manufacturers/importers (typically within half a rating point of one another). The retail buyers only saw two of the drivers—overseas production cost savings and the major retailer promotional campaigns—as declining in importance between the 2006-2008 and 2009-2011 time periods.

Figure 7. Significance Ratings of CFL Market Drivers:
2006-2008 vs. 2009-2011 Program Periods
(Corporate-Level Retailer Interviews)

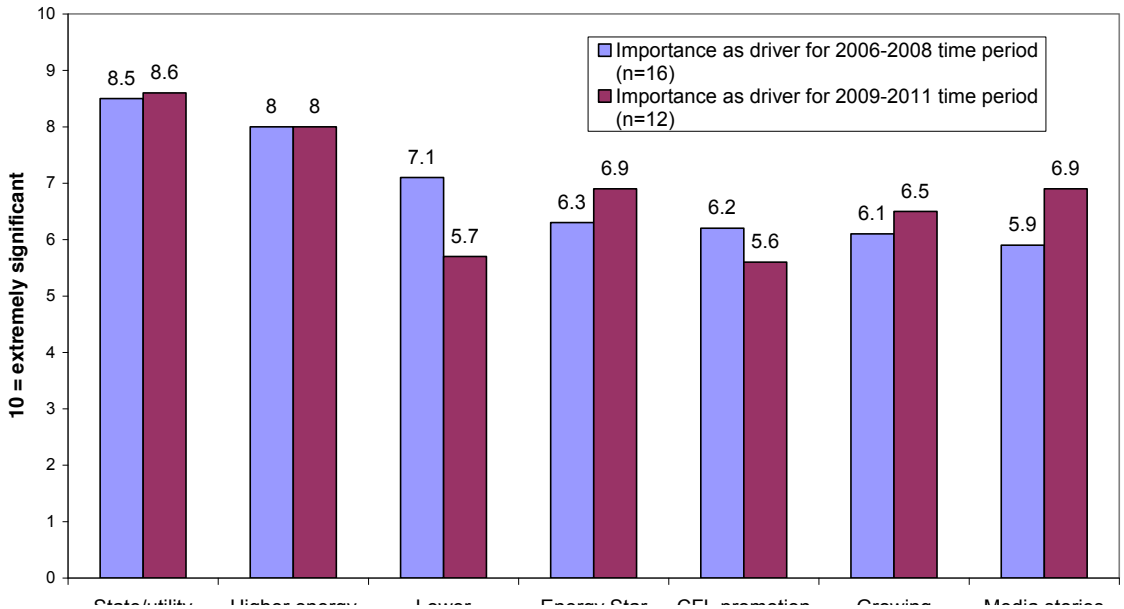


Table 1 summarizes other reasons participant manufacturers/importers and corporate-level retailers gave for lower significance ratings as well as the reasons for higher significance ratings they gave to some market drivers.

Table 1. Rationale for Higher and Lower Significance Ratings for CFL Market Drivers (Participant Manufacturer/Importer and Corporate-Level Retailer Interviews)

Possible CFL Drivers	Sample Reasons for Positive Ratings	Sample Reasons for Negative Ratings
State or utility rebate and discount programs?	• Programs make CFLs affordable by lowering prices • CFL sales drop when programs are not active	• Some states do not have active rebate programs.
The ENERGY STAR program including its Change-a-Light campaign?	• ENERGY STAR brand is recognizable indicator of quality • Change-of-light does create sales bump during October period	• Some manufacturers and retailers were not familiar with the Change-a-Light campaign o Short duration of Change-of-Light campaign limits its ability to increase sales
CFL promotion campaigns by some large retailers such as Wal-Mart, Home Depot, and Lowe's that are being done independently of any state or utility energy efficiency programs?	• They frequently broadcast TV and radio ads which increase general consumer awareness of CFLs • They have access to national markets	• Recent drops in CFL sales have discouraged some national retailers from conducting such promotions. • Some low-income consumers can't afford CFLs sold in Home Depot and Lowe's stores. • Many of these campaigns are not conducted independently of the state/utility CFL rebate programs, but are dependent on them.
Media stories promoting the use of CFLs?	• They are another way to increase awareness and knowledge of CFLs o Some media promotions of CFLs -- like Oprah's -- have created spikes in CFL demand	• Some media stories have focused on the mercury risks of CFLs • Local media stories only can impact a limited geographic area o These media stories usually don't reach ethnic shoppers
Reductions in CFL production costs and prices due to lower-cost overseas manufacturing and increases in CFL production capacity?	• Lowering prices has made CFLs more affordable • Increased production capacity has solved some of the CFL supply constraints that occurred in 2006	• In recent years CFL production costs have actually been rising. • The belief that production costs can't get much lower without sacrificing quality. • The weak economy can't sustain further increases in capacity and currently there is overcapacity. • Tougher standards – Energy Star, RoHs – will make the CFLs more expensive to produce. • Chinese labor costs are increasing and higher currency exchange rates with China will increase import costs.
Growing consumer awareness about global warming?	• Some areas of the country, like California, have a strong environmental ethic	• In some areas of the country, customers have some skepticism about global warming
Higher energy costs?	• In the current weak economy, people are trying to save money where they can	• The high first costs of undiscounted CFLs can make the payback period longer

Appendix F

2009 Nonparticipant Manufacturer and Corporate-Level Retailer Interview Guides

MARKET EFFECTS AND MARKET CHARACTERIZATION INTERVIEW GUIDE FOR NONPARTICIPANT LIGHTING MANUFACTURERS

Interviewer:	
Manufacturer:	City and State:
Contact Name:	Contact Title:
Phone:	Email:
Respondent's overall responsibility:	
Date:	Comments

Introduction [FOR INTERVIEWERS]

Contact Protocol

- Call potential respondents to ascertain most appropriate respondent. Obtain email address(es) of appropriate respondents. If company refuses interview, determine reasons for refusal and if it's logistical in nature, try to find workaround.
- Send email interview invitation to appropriate respondent. This invitation will include:
  - Explanation of purpose and scope of interview.
  - Explanation of time frame within which the interview will need to be completed.
  - Explanation of expected duration of interview and flexibility to complete interview over multiple sessions.
  - Instructions to propose a convenient interview time.
  - Contact information for interviewers.
  - Assurances of confidentiality.
  - A letter attachment from the CPUC explaining the importance of the interview.
- If target respondent does not respond to the email invitation within a few days, a follow-up call will be made to try to schedule an interview time, find an alternate interview target, or determine reasons for refusal.
- Once an interview time has been arranged, the respondent will be emailed, a copy of the interview guide as well as the bulb sales data tables (Table 1 & 2) below.

Company name/Date: _____

At the beginning of the interview, collect information on respondent's position and overall responsibilities.

2006-2008 CFL Product Sales and Trends

1. My first questions concern which compact fluorescent bulbs you sell throughout the US and what retail channels you sell them through. Is this a topic that you are familiar with?
   1. *Yes* (PROCEED)
   2. *No* (IF NOT FAMILIAR, GET ALTERNATIVE CONTACT NAME AND SKIP TO NEXT SECTION)

Intro to non-specialty CFL Bulbs and specialty CFL Bulbs: First I'm going to ask you some questions about your sales of non-specialty CFL bulbs and specialty CFL bulbs in the U.S. By "non-specialty" CFL bulbs I mean bulbs that do not have special functions or features such as reflectors, dimmability, three-way light levels, or flood lighting. Non-Specialty CFL bulbs are usually spiral or twister style. By "Specialty" CFL bulbs I mean bulbs that do have special features or bulb shapes.

2. Does your company manufacture non-specialty CFLs?
   1. *Yes*
   2. *No*
   3. *Don't Know*

3. Does your company manufacture specialty CFLs?
   1. *Yes*
   2. *No*
   3. *Don't Know*

4. Does your company own the manufacturing facility/employ the factory workers or import the bulbs from a contracted facility?
   1. *Own the facility and/or directly employ the factory workers*
   2. *Import from a contracted facility*
   3. *Both*
   4. *Other:* _____
   5. *Don't Know*

5. To the best of your knowledge, has your company participated in any CFL buy-down or rebate programs sponsored by California utilities (PG&E, SCE, or SDG&E) in 2006-2008?

Company name/Date: _____

1. *Yes*
   a. Under what company name or brand name did you participate?_____
   b. During what years did you participate?_____
   [CONFIRM, THANK, AND TERMINATE]
2. *No*
3. *Don't Know*

6. Where are most of the CFL products you sell manufactured?
   _____

7. Has your company participated in any state/local government- or utility-sponsored CFL buy-down or rebate programs in 2006-2008? Buy-down programs provide a per-bulb incentive to manufacturers or retailers to reduce the cost of CFLs to end consumers.
   1. *Yes*
      a. Which utility or government agency(ies)?
      _____
      b. What was the discount per bulb? [IF APPLICABLE, NOTE DIFFERENCES BY UTILITY OR GOVERNMENT AGENCY]
      _____
      c. Approximately how many bulbs did they discount? [IF APPLICABLE, NOTE DIFFERENCES BY UTILITY OR GOVERNMENT AGENCY]
      _____
      d. Over what time period did this occur? [IF APPLICABLE, NOTE DIFFERENCES BY UTILITY OR GOVERNMENT AGENCY]
      _____
      [SKIP TO QUESTION 10]
   2. *No*
   3. *Don't know*

8. [IF ANSWERED YES TO MANUFACTURING NON-SPECIALTY BULBS] Have you considered selling non-specialty CFLs through any state/local government- or utility-sponsored energy-efficiency programs?
   1. *Yes*
      a. Which program(s)?
      _____
      b. When did you consider it/them?
      _____

Company name/Date: _____

c. Can you provide any details on that/those program(s)?

_____

d. Why did you choose not to participate?

_____

2. *No*
   a. Why not?

   _____

3. *Don't Know*

9. [IF ANSWERED YES TO MANUFACTURING SPECIALTY BULBS] Have you considered selling specialty CFLs through any state/local government- or utility-sponsored energy-efficiency programs?
   1. *Yes*
      a. Which program(s)?

      _____

      b. When did you consider it/them?

      _____

      c. Can you provide details on that/those program(s)?

      _____

      d. Why did you choose not to participate?

      _____

   2. *No*
      a. Why not?

      _____

   3. *Don't Know*

10. In which states are your company's CFLs available in retail stores?

    _____

11. [IF ANSWERED "YES" TO MANUFACTURING NON-SPECIALTY BULBS (Question 2)]
    Did you sell non-specialty CFLs in California during the 2006-2008 time period?
    1. *Yes*
    2. *No*
    3. *Don't Know*

Company name/Date: _____

12. [IF ANSWERED "YES" TO MANUFACTURING SPECIALTY BULBS (Question 3)] Did you sell specialty CFLs in California during the 2006-2008 time period?
    1. *Yes*
    2. *No*
    3. *Don't Know*

[IF QUESTION 11="YES" OR QUESTION 12="YES"]

13. Are you aware that electric utilities in several states, such as California and Massachusetts, have CFL buy-down programs?
    1. *Yes*
       a. Why didn't you sell these CFL bulbs through the utility-sponsored programs?

       _____

       b. [IF THEY INDICATE MULTIPLE REASONS] Which of these reasons was the most important?

       _____

    2. *No*
       a. What advantages, if any, do you see in *not* selling CFL bulbs through a CFL buy-down program?

       _____

       b. What disadvantages, if any, do you see in *not* selling CFL bulbs through a CFL buy-down program?

       _____

    3. *Don't know*

14. There are a number CFL promotional campaigns sponsored by utilities and government agencies across the US—for example, the US EPA's ENERGY STAR Change-a-Light promotion. Please indicate how significant you think these promotions have been as a driver of increased CFL product sales in the 2006-2008 period. Please use a 0 to 10 scale, where 0 is not at all significant and 10 is extremely significant. [RECORD RATING]

    _____

    a. Why do you give it this rating?

    _____

15. How significant do you think the California state and utility promotional campaigns have been as a driver of increased CFL product sales in the 2006-2008 period. Please use a 0 to 10 scale, where 0 is not at all significant and 10 is extremely significant. [RECORD RATING] _____

    a. Why do you give it this rating?

    _____

Company name/Date: _____

Early, Cumulative Effects of California Lighting Buy-Down & Rebate Programs

16. [IF ANSWERED YES TO MANUFACTURING NON-SPECIALTY BULBS] Has your firm experienced any changes (either reductions or increases) in manufacturing production costs for non-specialty CFLs over the last ten years?
    1. *Yes – Reductions in manufacturing costs*
        a. Have these reductions in manufacturing costs reduced the average price per CFL over the past ten years? [Y/N]_____

            i. If yes, by how much?
            _____

        b. What factors have led to these reductions in manufacturing production costs?_____

        c. [IF GOV'T/UTILITY BUY-DOWN OR REBATE PROGRAMS ARE MENTIONED IN "B."] How did these buy-down or rebate programs influence the reductions in your manufacturing costs? [PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE.]
        _____

        d. [IF GOV'T/UTILITY BUY-DOWN OR REBATE PROGRAMS ARE MENTIONED IN "B" AND CA PROGRAMS NOT MENTIONED IN "C"] How did the California buy-down or rebate programs influence the reductions in your manufacturing costs? _____

        e. [IF GOV'T/UTILITY BUY-DOWN OR REBATE PROGRAMS ARE MENTIONED IN "B." BE SURE TO CAPTURE RESPONSE FOR CA, IF APPLICABLE.] In what time period did these buy-down or rebate programs influence the reductions in your manufacturing costs?

---

        f. [IF STATE/UTILITY BUY-DOWN OR REBATE PROGRAMS ARE MENTIONED IN "B"] Do you think that the utility and state/local government lighting buy-down or rebate programs in particular have been an important factor in influencing these reductions in your manufacturing costs? [Y/N; PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE.]
        _____

            i. [IF YES] How important a factor were the utility and state/local government lighting buy-down or rebate programs, in particular, in influencing these reductions in your manufacturing costs? Please use a scale of 0 to 10 where 10 equals "very important"

Company name/Date: _____

and 0 equals "not important at all."[RECORD RATING; PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE] _____

ii. Why do you give this rating? [PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE.]

_____

g. [IF STATE/UTILITY BUY-DOWN OR REBATE PROGRAMS ARE MENTIONED IN "B"] Did the decreases in manufacturing costs (in response to the buy-down or rebate programs) lead to a change in your CFL manufacturing capacity? [Y/N] _____

[IFYES:]

i. Was the change an increase or decrease? _____
ii. By how much? [RECORD %] _____
iii. Approximately when did the increase/decrease in your CFL manufacturing capacity caused by the buy-down or rebate programs occur?

_____

iv. By approximately what % did the increase/decrease in CFL manufacturing capacity reduce your average CFL production cost? [RECORD %] _____

h. [IF STATE/UTILITY BUY-DOWN OR REBATE PROGRAMS ARE MENTIONED IN "B"] Do you think any one state or utility program had more influence on reducing manufacturing costs? [Y/N] _____

i. [IF YES] Which state or utility had the most influence?

_____

ii. How did this/these program(s) lead to reductions in your manufacturing costs? [PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE]

_____

i. [IF GENERAL INCREASES IN WORLD CFL DEMAND MENTIONED IN "B"] How important a factor were the utility and state/local government lighting buy-down or rebate programs, in particular, in increasing demand for these CFL products? Please use a scale of 0 to 10 where 10 equals "very important" and 0 equals "not important at all." [RECORD RATING; PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE.] _____

i. Why do you give that rating? [PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE]

_____

Company name/Date: _____

j. [IF TECHNOGICAL IMPROVEMENTS AT THE FACTORY MENTIONED IN "B"] How important a factor were the utility and state/local government lighting buy-down or rebate programs, in particular, in driving these technological improvements in the factory? Please use a scale of 0 to 10 where 10 equals "very important" and 0 equals "not important at all."
[RECORD RATING; PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE]_____

i. Why do you give that rating? [PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE.]

_____

2. *Yes -increases in manufacturing costs*

a. Have these increases in manufacturing costs changed the average price per CFL over the past ten years? [Y/N]_____

i. If yes, have the average CFL prices increased or decreased and by how much?

_____

b. What factors have led to these increases in manufacturing production costs?_____

c. [IF GOV'T/UTILITY BUY-DOWN OR REBATE PROGRAMS ARE MENTIONED IN "B."] How did these buy-down or rebate programs influence the increases in your manufacturing costs? [PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE.]

_____

d. [IF GOV'T/UTILITY BUY-DOWN OR REBATE PROGRAMS ARE MENTIONED IN "B" AND CA PROGRAMS NOT MENTIONED IN "C"] How did the California buy-down or rebate programs influence the increases in your manufacturing costs? _____

e. [IF GOV'T/UTILITY BUY-DOWN OR REBATE PROGRAMS ARE MENTIONED IN "B." BE SURE TO CAPTURE RESPONSE FOR CA, IF APPLICABLE.] In what time period did these buy-down or rebate programs influence the increases in your manufacturing costs?

_____

f. [IF STATE/UTILITY BUY-DOWN OR REBATE PROGRAMS ARE MENTIONED IN "B"] Do you think that the utility and state/local government lighting buy-down or rebate programs in particular have been an important factor in influencing these increases in your manufacturing costs? [Y/N; PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE.] _____

Company name/Date: _____

i. [IF YES] How important a factor were the utility and state/local government lighting buy-down or rebate programs, in particular, in influencing these increase in your manufacturing costs? Please use a scale of 0 to 10 where 10 equals "very important" and 0 equals "not important at all." [RECORD RATING; PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE] _____

ii. Why do you give this rating? [PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE.]

_____

g. [IF STATE/UTILITY BUY-DOWN OR REBATE PROGRAMS ARE MENTIONED IN "B"] Did the decreases in manufacturing costs (in response to the buy-down or rebate programs) lead to a change in your CFL manufacturing capacity? [Y/N] _____

[IF YES:]

i. Was the change an increase or decrease? _____

ii. By how much? [RECORD %] _____

iii. Approximately when did the increase/decrease in your CFL manufacturing capacity caused by the buy-down or rebate programs occur?

_____

iv. By approximately what % did the increase/decrease in CFL manufacturing capacity reduce your average CFL production cost? [RECORD %] _____

h. [IF STATE/UTILITY BUY-DOWN OR REBATE PROGRAMS ARE MENTIONED IN "B"] Do you think any one state or utility program had more influence on increasing manufacturing costs? [Y/N] _____

i. [IF YES] Which state or utility had the most influence?

_____

ii. How did this/these program(s) lead to increases in your manufacturing costs? [PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE]

_____

i. [IF GENERAL INCREASES IN WORLD CFL DEMAND MENTIONED IN "B"] How important a factor were the utility and state/local government lighting buy-down or rebate programs, in particular, in increasing demand for these CFL products? Please use a scale of 0 to 10 where 10 equals "very important" and 0 equals "not important at all." [RECORD RATING; PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE.] _____

Company name/Date: _____

i. Why do you give that rating? [PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE.]

_____

j. [IF TECHNOGICAL IMPROVEMENTS AT THE FACTORY MENTIONED IN "B"] How important a factor were the utility and state/local government lighting buy-down or rebate programs, in particular, in driving these technological improvements in the factory? Please use a scale of 0 to 10 where 10 equals "very important" and 0 equals "not important at all." [RECORD RATING; PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE.]

_____

i. Why do you give that rating? [PROBE FOR RESPONSE SPECIFIC TO CA PROGRAMS, IF APPROPRIATE.]

_____

3. *No*
4. *Don't know*

17. Has any utility or state/local government CFL buy-down or rebate programs adversely affected your company? Adverse effects might be adverse changes in quality, cost, competition, or other factors.
    1. *Yes*
        a. Which programs have adversely affected your company?

        _____

        b. What adverse effects has your firm experienced?

        _____
    2. *No*
    3. *Don't know*

18. [IF CA PROGRAMS NOT EXPLICITLY MENTIONED IN RESPONSE TO PREVIOUS QUESTION] Have California's CFL buy-down or rebate programs adversely affected your company? Adverse effects might be adverse changes in quality, cost, competition, or other factors.
    1. *Yes*
        a. Which California program have adversely affected your company?

        _____

        b. What adverse effects has your firm experienced as a result of the California program(s)?

        _____
    2. *No*
    3. *Don't know*

Company name/Date: _____

19. [IF ANSWERED YES TO MANUFACTURING NON-SPECIALTY BULBS] If utility and state/local government buy-down and rebate programs were to be eliminated, do you think your average production costs for non-specialty CFLs would go up, would go down, or stay about the same? [RECORD RESPONSE]_____

    a. Why do you say that?_____

20. Do you think the quality of CFL products in recent years has been increasing, decreasing, or staying about the same?
    1. *Increasing*
    2. *Decreasing*
       a. What factors do you think might be leading to the production of lower quality CFL products? _____
    3. *Staying the Same*
    4. *Don't Know*

21. What do you think should be done to improve the quality of CFL products?

    _____

    _____

22. Do you think that CFL product buy-down and rebate programs run by electric utilities or state/local government agencies have affected consumer attitudes towards the quality of CFL products in any way?
    1. *Yes*
       a. In what way? _____
    2. *No*
    3. *Don't Know*

23. What about California's CFL programs? Do you think that California's CFL buy-down and rebate programs have affected consumer attitudes towards the quality of CFL products in any way?
    1. *Yes*
       a. In what way? _____
    2. *No*
    3. *Don't Know*

24. For years utility and state/local government lighting buy-down and rebate programs have been working to improve the performance of CFLs as well as their acceptability as substitutes for incandescent bulbs. For example, these programs have long required ENERGY STAR compliance and offered larger discounts or rebates for higher lumen

Company name/Date: _____

25. levels at a given wattage level. What impact, if any, have these program requirements had on the performance of the CFLs that you manufacture?

_____

_____

26. If state/local government- and utility-sponsored buy-down and rebate programs had not existed, do you think the performance improvements you have made to your CFLs would have happened sooner, later, or about the same time as they actually did?
    1. *Sooner*
    2. *Later*
        a. How much later would you have made these performance improvements?

        _____
    3. *Stay the Same*
    4. *Don't know*

27. What about the California programs? If California's state government- and utility-sponsored buy-down and rebate programs had not existed, do you think the performance improvements you have made to your CFLs would have happened sooner, later, or about the same time as they actually did?
    1. *Sooner*
    2. *Later*
        a. How much later would you have made these performance improvements?

        _____
    3. *Stay the Same*
    4. *Don't know*

28. Have state/local government- or utility-sponsored lighting buy-down and rebate programs influenced the way that you market your CFLs?
    1. *Yes*
        a. How so?

        _____
    2. *No*
    3. *Don't Know*

29. What about the California programs? Have the California utility-sponsored lighting buy-down and rebate programs influenced the way that you market your CFLs?
    1. *Yes*
        a. How so?

        _____
    2. *No*
    3. *Don't Know*

30. State/local government- or utility-sponsored buy-down and rebate programs are only some of the factors that may be encouraging sales of CFL bulbs. I'm going to name a number of possible drivers of increased CFL bulbs. For each one I identify, please

Company name/Date: _____

indicate how significant you think it is as a driver of increased CFL product sales during the 2006-2008 period. Please use a 0 to 10 scale, where 0 is not at all significant and 10 is extremely significant

a. State/local government or utility buy-down and rebate programs? [RECORD RATING]___
   [Why do you give this rating?]_____

b. The California utility-sponsored lighting buy-down and rebate programs? [RECORD RATING]_____
   [Why do you give this rating?]_____

c. The ENERGY STAR program including its Change-a-Light campaign? [RECORD RATING]_____
   [Why do you give this rating?]_____

d. CFL promotion campaigns by some large retailers such as Wal-Mart, Home Depot, and Lowe's that are being done independently of any state/local government or utility energy-efficiency programs? [RECORD RATING]_____
   [Why do you give this rating?]_____

e. Media stories promoting the use of CFLs? [RECORD RATING]_____
   [Why do you give this rating?]_____

f. Reductions in CFL production costs and price points due to lower-cost overseas manufacturing and increases in CFL production capacity? [RECORD RATING]_____
   [Why do you give this rating?]_____

g. Growing consumer awareness about global warming? [RECORD RATING]_____
   [Why do you give this rating?]_____

h. Higher energy costs? [RECORD RATING]_____
   [Why do you give this rating?]_____

CFL Product Information

Earlier I emailed you two tables that shows you a record of the types and numbers of non-specialty and specialty CFL bulbs that we are interested in, that we were hoping you could fill in. [IF THEY COMPLETE THESE TABLES, SKIP TO QUESTION 33]

Company name/Date: _____

Table 1
Non-Specialty Bulb Data Table

Product Type/Channel	# of non-specialty Bulbs Sold in U.S.			
	2006	2007	2008	Total 2006-2008
Retail Channel (circle one): Large Home Improvement Discount Grocery Other Mass Merchandise Club Store Drug Store				
CFL 9-12 Watt; 400-650 Lumens (40W Incandescent Equivalent)				
CFL 13-15 Watt; 600-900 Lumens (60W Incandescent Equivalent)				
CFL 16-20 Watt; 900-1200 Lumens (75W Incandescent Equivalent)				
CFL 22-26 Watt; 1200-1800 Lumens (100W Incandescent Equivalent)				
Other:				
Retail Channel (circle one): Large Home Improvement Discount Grocery Other Mass Merchandise Club Store Drug Store				
CFL 9-12 Watt; 400-650 Lumens (40W Incandescent Equivalent)				
CFL 13-15 Watt; 600-900 Lumens (60W Incandescent Equivalent)				
CFL 16-20 Watt; 900-1200 Lumens (75W Incandescent Equivalent)				
CFL 22-26 Watt; 1200-1800 Lumens (100W Incandescent Equivalent)				
Other:				
Retail Channel (circle one): Large Home Improvement Discount Grocery Other Mass Merchandise Club Store Drug Store				
CFL 9-12 Watt; 400-650 Lumens (40W Incandescent Equivalent)				
CFL 13-15 Watt; 600-900 Lumens (60W Incandescent Equivalent)				
CFL 16-20 Watt; 900-1200 Lumens (75W Incandescent Equivalent)				
CFL 22-26 Watt; 1200-1800 Lumens (100W Incandescent Equivalent)				
Other:				
Retail Channel (circle one): Large Home Improvement Discount Grocery Other Mass Merchandise Club Store Drug Store				
CFL 9-12 Watt; 400-650 Lumens (40W Incandescent Equivalent)				
CFL 13-15 Watt; 600-900 Lumens (60W Incandescent Equivalent)				
CFL 16-20 Watt; 900-1200 Lumens (75W Incandescent Equivalent)				
Other:				

Company name/Date: ______________________________

Table 2
Specialty Data Table

Product Type/Channel	# of SPECIALTY Bulbs Sold in U.S. 2006	2007	2008	Total 06-08
Retail Channel (circle one): Large Home Improvement Discount Grocery Other Mass Merchandise Club Store Drug Store				
CFL 9-12 Watt; 400-650 Lumens (40W Incandescent Equivalent)				
CFL 13-15 Watt; 600-900 Lumens (60W Incandescent Equivalent)				
CFL 16-20 Watt; 900-1200 Lumens (75W Incandescent Equivalent)				
CFL 22-26 Watt; 1200-1800 Lumens (100W Incandescent Equivalent)				
Other:				
Retail Channel (circle one): Large Home Improvement Discount Grocery Other Mass Merchandise Club Store Drug Store				
CFL 9-12 Watt; 400-650 Lumens (40W Incandescent Equivalent)				
CFL 13-15 Watt; 600-900 Lumens (60W Incandescent Equivalent)				
CFL 16-20 Watt; 900-1200 Lumens (75W Incandescent Equivalent)				
CFL 22-26 Watt; 1200-1800 Lumens (100W Incandescent Equivalent)				
Other:				
Retail Channel (circle one): Large Home Improvement Discount Grocery Other Mass Merchandise Club Store Drug Store				
CFL 9-12 Watt; 400-650 Lumens (40W Incandescent Equivalent)				
CFL 13-15 Watt; 600-900 Lumens (60W Incandescent Equivalent)				
CFL 16-20 Watt; 900-1200 Lumens (75W Incandescent Equivalent)				
CFL 22-26 Watt; 1200-1800 Lumens (100W Incandescent Equivalent)				
Other:				
Retail Channel (circle one): Large Home Improvement Discount Grocery Other Mass Merchandise Club Store Drug Store				
CFL 9-12 Watt; 400-650 Lumens (40W Incandescent Equivalent)				
CFL 13-15 Watt; 600-900 Lumens (60W Incandescent Equivalent)				
CFL 16-20 Watt; 900-1200 Lumens (75W Incandescent Equivalent)				
CFL 22-26 Watt; 1200-1800 Lumens (100W Incandescent Equivalent)				

Company name/Date: ______________________________

31. [IF THEY DO NOT COMPLETE TABLE 1 OR TABLE 2 ABOVE] Please provide your best estimate of the % of non-specialty and specialty CFL bulbs that you sold in the US during the 2006-2008 period fit into the following categories:

Table 3

	Non-Specialty	Specialty
Utility/government-discounted % CFL bulbs sold in the U.S. during the 2006-2008 period that were utility or government discounted.	__%	__%
Non-discounted ENERGY STAR % CFL bulbs sold in the U.S. during the 2006-2008 period that met ENERGY STAR specifications but were not discounted by any utility or government program.	__%	__%
Non-ENERGY STAR % CFL bulbs sold in the U.S. during the 2006-2008 period that did not meet ENERGY STAR specifications.	__%	__%
Total CFL bulbs sold in the U.S. during the 2006-2008 period	100%	100%

32. What retail channels did you sell these CFLs through? For each retail channel I say, please say "yes" or "no."
    a. Large Home Improvement (YES/NO)
    b. Discount Store (YES/NO)
    c. Grocery Store (YES/NO)
    d. Mass Merchandise (YES/NO)
    e. Membership/Club Store (YES/NO)
    f. Drug Store (YES/NO)
    g. Other (specify:_____) (YES/NO)

33. Please indicate the percentage of your total CFL sales that were sold through each of the retail channels you just mentioned. [TOTAL OF VALUES ENTERED BELOW MUST EQUAL 100%]
    a. Large Home Improvement _____%
    b. Discount Store _____%
    c. Grocery Store _____%
    d. Mass Merchandise _____%
    e. Membership/Club Store _____%
    f. Drug Store _____%
    g. Other (specify:_____) _____%

Company name/Date: _____

34. [IF ANSWERED "YES" TO MANUFACTURING NON-SPECIALTY, NON-ENERGY STAR] You mentioned that in the 2006-2008 period you sold non-specialty non-ENERGY STAR CFLs in the U.S.. Why do you sell these rather than ENERGY STAR CFLs?

    _____

    a. [IF RESPONDENT INDICATES MULTIPLE REASONS] Which of these reasons was the most important?

       _____

    b. What would have to change for you to only offer ENERGY STAR CFLs for the CFLs you sell?_____

    c. What are the advantages and disadvantages of getting bulbs certified by ENERGY STAR?_____

       _____

35. [IF ANSWERED "YES" TO MANUFACTURING SPECIALTY BULBS (Question 3)] During the 2006-2008 periods did you sell SPECIALTY CFL bulbs in the US that are not ENERGY STAR certified?
    1. *Yes*
       a. What types of bulb types and packages were these specialty, non-ENERGY STAR bulbs? Examples of bulb styles include spiral/twister, globe, A-lamp, torpedo/bullet, bug light, spotlight/reflector/flood/, circline, tube.

          _____

       b. Which retail channels do you sell these specialty, non-ENERGY STAR bulbs through[REFER TO LIST OF CHANNELS]?

          _____
    2. *No*
    3. *Don't Know*

36. [IF ANSWERED YES TO MANUFACTURING NON-SPECIALTY BULBS (Question 2)] Did you sell non-specialty CFLs in the 2006-2008 time period that you believe exceeded ENERGY STAR specifications? [IF NECESSARY, REMIND RESPONDENT OF ENERGY STAR SPECIFICATIONS]
    1. *Yes*
       a. What types (e.g., wattages, brands, base types) of non-specialty CFL bulbs were these. Base types are usually medium screw based, small or candelabra screw base, pin or GU.

          _____

Company name/Date: _____

b. In what ways do these bulbs exceed the ENERGY STAR specification?

_____

c. Why did you offer such non-specialty CFLs that exceeded ENERGY STAR specifications?

_____

d. What distribution channels did you sell these better-than-ENERGY STAR CFL bulbs through?

a. Large Home Improvement (YES/NO)
b. Discount Store (YES/NO)
c. Grocery Store (YES/NO)
d. Mass Merchandise (YES/NO)
e. Membership/Club Store (YES/NO)
f. Drug Store (YES/NO)
g. Other (specify:_____) (YES/NO)]

e. About what percentage of the non-SPECIALTY CFL bulbs that you sold throughout the US during the 2006-2008 period did these account for (i.e., a 10% answer would mean that 10% of the non-specialty bulbs sold in the US during 2006-2008 exceeded ENERGY STAR standards)?

_____

2. *No*
3. *Don't know*

37. [IF ANSWERED "YES" TO MANUFACTURING SPECIALTY BULBS (Question 3)] Did you sell specialty CFLs in the 2006-2008 time period that you believe exceed ENERGY STAR specifications? [IF NECESSARY, REMIND RESPONDENT OF ENERGY STAR SPECIFICATIONS]

1. *Yes*

a. What types (e.g., wattages, brands, bulb styles, base types) of specialty CFL bulbs were these? Examples of bulb styles include spiral/twister, globe, A-lamp, torpedo/bullet, bug light, spotlight/reflector/flood/, circline, tube. Base types are usually medium screw based, small or candelabra screw base, pin or GU.

_____

b. In what ways do these bulbs exceed the ENERGY STAR specification?

_____

_____

c. Why did you offer such specialty CFLs that exceeded ENERGY STAR specifications?

_____

Company name/Date: _____

d. What distribution channels did you sell these better-than-ENERGY STAR CFL bulbs through?

a. Large Home Improvement (YES/NO)
b. Discount Store (YES/NO)
c. Grocery Store (YES/NO)
d. Mass Merchandise (YES/NO)
e. Membership/Club Store (YES/NO)
f. Drug Store (YES/NO)
g. Other (specify:_____) (YES/NO)]

e. Approximately what percentage of the SPECIALTY CFL bulbs that you sold throughout the US during the 2006-2008 period did these account for? (i.e., a 10% answer would mean that 10% of the specialty bulbs sold in the US during 2006-2008 exceeded ENERGY STAR standards).

_____

2. *No*
3. *Don't know*

38. If we provided assurances to protect the confidentiality of your data, would you be willing to share recent CFL product sales data for the US states in which you sell CFLs?
    1. *Yes*
        a. What would be the next step for getting these data?

        _____
    2. *No*

Pricing

39. How much influence do the retailers in the channels you sell to have over the price of the CFL products that you supply them? Would you say that they are very influential, somewhat influential, or not very influential?
    1. *Very Influential*
    2. *Somewhat Influential*
    3. *Not Very Influential*
    4. *Don't Know*

40. Some claim that retailers often use something called "keystone pricing" where they double the wholesale price to determine the retail price. In your experience, how frequently is this keystone pricing used for setting retail prices for CFL products. Would you say it is done always, most of the time, some of the time, or never?
    1. *Always*
    2. *Most of the time*
    3. *Some of the time*
    4. *Never*
    5. *Don't Know*

Company name/Date: _____

a. [IF NOT USED ALWAYS] What other rules or strategies do retailers use to mark up wholesale prices?

_____

_____

41. CFL product prices have been declining in the last 10 years. Do you think this trend will continue, or will prices level off or even increase?_____
    a. What factors cause you to make this prediction?

    _____

Market Characterization

42. How would you characterize the current market for CFL products in the United States in terms of major players? For example, are there a few major players responsible for the major share of product sales? Or are there a large number of major players?

    _____

43. Where would you characterize your firm in terms of market share for the US CFL market? _____

44. What do you think will be the impact of the lighting standards specified in the 2007 Energy Bill on CFL sales and prices?

    _____

45. What are your expectations for U.S. CFL product sales in 2009 and beyond? [PROBE--ASK RESPONDENT TO ELABORATE ON WHY S/HE ANSWERED THIS WAY]

    _____

46. Do you sell CFL products in other countries besides the United States?
    1. *Yes*
       a. Are you familiar with your company's international sales trends? [Y/N]

       _____

       [IF YES]
       i. How do your international sales trends for CFL products compare to those in the United States?

          _____

       ii. What do you think are driving these international sales trends?

          _____
    2. *No*
    3. *Don't Know*

Company name/Date: _____

Product Quality, Recycling

47. ENERGY STAR'S "CFL Criteria Version 4.0" was released in February 2008 and became effective in November 2008. What do you think the impact of the new ENERGY STAR standards has been on CFL products and prices?

    _____
    _____

48. CFL disposal has becomes a major issue in recent years. What policies do you advocate for dealing with CFL disposal?

    _____
    _____

49. What actions, if any, has your own company taken to encourage environmentally-safe recycling and disposal of CFL products?

    _____
    _____

[THANK AND TERMINATE]

Company name/Date: _____

MARKET EFFECTS, AND MARKET CHARACTERIZATION INTERVIEW GUIDE FOR NONPARTICIPANT EXECUTIVES OF LARGE LIGHTING RETAILERS

Interviewer:	
Retailer Name:	City and State:
Contact Name:	Contact Title:
Phone:	Email:
Respondent's overall responsibility:	
Date:	Comments:

Introduction [FOR INTERVIEWERS]

Contact Protocol

- Call potential respondents to ascertain most appropriate respondent. Obtain email address(es) of appropriate respondents. If company refuses interview, determine reasons for refusal and if it's logistical in nature, try to find workaround.
- Send e-mail interview invitation to appropriate respondent. This invitation will include:
    - Explanation of purpose and scope of interview.
    - Explanation of time frame within which the interview will need to be completed.
    - Explanation of expected duration of interview and flexibility to complete interview over multiple sessions.
    - Instructions to propose a convenient interview time.
    - Contact information for interviewers.
    - Assurances of confidentiality.
    - A letter attachment from the CPUC explaining the importance of the interview.
- If target respondent does not respond to the email invitation within a few days, a follow-up call will be made to try to schedule an interview time, find an alternate interview target, or determine reasons for refusal.
- Once an interview time has been arranged, the respondent will be emailed a copy of the interview guide as well as a customized data table similar to Table 1 below.

At the beginning of the interview, collect information on respondent's position and overall responsibilities.

Company name/Date: _____

CFL Familiarity

1. My questions for this interview are about the CFL bulbs you sell in the US. Is this a topic that you are familiar with?
    1. *Yes* [PROCEED]
    2. *No* [ASK FOR ALTERNATIVE CONTACT NAME, THANK AND TERMINATE]

    _____

2. Specialty & Non-Specialty CFL Bulbs: Do you sell both non-specialty and specialty CFLs in your stores(s)? By "non-specialty" CFLs I mean bulbs that do not have special functions or features such as reflectors, dimmability, 3-way light levels, or flood lighting.
    1. *Yes, both*
    2. *Yes, non-specialty only*
    3. *Yes, specialty only*
    4. *No, neither* [THANK AND TERMINATE]

3. In which US states do you have retail stores that sell CFL bulbs?

    _____

    [RESPONSE = STATE(S)]

4. In what year did you begin selling CFLs at your store(s)? _____

5. Do you recall the factors that influenced your decision to start selling CFLs? [IF NECESSARY, PROMPT FOR FACTORS SUCH AS OFFERING INVENTORY COMPARABLE TO COMPETITORS, CUSTOMER REQUESTS, AND MANUFACTURER OFFERINGS OR PROMOTIONS]

    _____

6. In what year did you begin selling ENERGY STAR CFLs at your store(s)?

    _____

7. Do you recall the factors that influenced your decision to start selling ENERGY STAR CFLs? [IF NECESSARY, PROMPT FOR FACTORS SUCH AS OFFERING INVENTORY COMPARABLE TO COMPETITORS, CUSTOMER REQUESTS, AND MANUFACTURER OFFERINGS OR PROMOTIONS]

    _____

8. Are you familiar with the CFL buy-down and rebate programs that have been offered by California's electric utilities (Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric) for the past several years?
    1. *Yes*
        a. What is your understanding of the types of CFL programs offered in California and how they work?

        _____

Company name/Date: _____

b. [IF RESPONSE TO QUESTION 3 = CA] Have you ever been contacted about becoming involved in any CFL buy-down or rebate programs by one of California's large electric utilities (PG&E, SCE, or SDG&E)?

i. *Yes*

a) What is the primary reason you chose not to get involved with California CFL buy-down or rebate programs?

_____

b) Did you have any other reasons for not getting involved with the California CFL programs? [IF YES] What were these?

_____

ii. *No*

2. *No*

Retailer Add-On Rebates

9. During the 2006-2008 period, did your company ever provide any of its own price discounts or rebates on ENERGY STAR CFL bulbs?

1. *Yes*

a. What were your reasons for providing these additional price discounts?

_____

b. What was the typical range of these additional discounts on a $ per bulb basis?

_____

c. Were there particular types of bulbs that you were more likely to offer these additional discounts on?

[IF YES]

d. What types of bulbs were these? [PROBE IN TERMS OF CFL STYLE, MANUFACTURER, BASE TYPE, WATTAGE, LUMENS, PACKAGE SIZE, ENERGY STAR-LABELED, ETC.]

_____

2. *No*

a. Why not?

_____

10. Manufacturers at times offer buy-downs or rebates on CFLs. Using a scale of 0 to 10 where 10 equals "very likely" and 0 equals "not likely at all," how likely would your company have been to offer its own price discounts when/if manufacturer buy-downs or rebates were also available? _____

Free Ridership and In-State Spillover

11. Does your company ever sell state/local government or utility-discounted CFL bulbs within [STATE(S)]?

Company name/Date: _____

1. *Yes*

   a. Who discounted these bulbs? [SPECIFY BY STATE/PROGRAM]

   b. How many discounted bulbs did you receive during 2006-2008? [SPECIFY BY STATE/PROGRAM; PROBE FOR DETAILED CA-SPECIFIC DATA IF RESPONSE TO QUESTION 3 = CA]

   _____

   c. How many shipments of discounted bulbs did you receive during 2006-2008? [SPECIFY BY STATE/PROGRAM; PROBE FOR DETAILED CA-SPECIFIC DATA IF RESPONSE TO QUESTION 3 = CA]

   _____

   d. Do you recall any specific dates when you received shipments? [SPECIFY BY STATE/PROGRAM; PROBE FOR DETAILED CA-SPECIFIC DATA IF RESPONSE TO QUESTION 3 = CA]

   _____

   e. Do you promote these utility- or state/local government-discounted CFL bulbs differently from how you promote the non-discounted CFL bulbs? [SPECIFY BY STATE/PROGRAM; PROBE FOR DETAILED CA-SPECIFIC DATA IF RESPONSE TO QUESTION 3 = CA]

      i. Yes

         a) How are your promotional efforts different for utility- or state/local government-discounted CFLs?

         _____

      ii. No

   f. Do you think changes in shopper foot traffic due to utility- or state/local government-discounted CFL bulbs have any impact on the sales of non-discounted CFL bulbs that are being sold at the same time? [Y/N] _____

      i [IF YES] Why do you say that? [PROBE FOR DETAILED CA-SPECIFIC DATA IF RESPONSE TO QUESTION 3 = CA]

      _____

   g. Are the utility- or state/local government-discounted CFLs typically sold at a lower retail price, a higher retail price, or at the same retail prices as the non-discounted bulbs? [PROBE FOR DETAILED CA-SPECIFIC DATA IF RESPONSE TO QUESTION 3 = CA]

   _____

   [IF "LOWER" OR "HIGHER"] On a per-bulb basis, on average, how much (lower/higher) are the prices of the utility or government-discounted CFL bulbs than the other CFL bulbs that you sell? [PROBE FOR DETAILED CA-SPECIFIC DATA IF RESPONSE TO QUESTION 3 = CA]

   _____

   [FOR EACH STATE/PROGRAM, SPECIFY: $ or % AND WHETHER LOWER OR HIGHER]

Company name/Date: _____

2. *No* [SKIP TO QUESTION 15]

12. Are your pricing strategies for the CFLs with utility or government discounts handled differently from your pricing strategies for non-utility or government-discounted products? [SPECIFY BY STATE/PROGRAM]

    1. *Yes*

       a. How do the pricing strategies for CFLs with utility or government discounts differ from those of non-discounted CFLs? [PROBE FOR DETAILED CA-SPECIFIC DATA IF RESPONSE TO QUESTION 3 = CA]

          _____

    2. *No*

13. What effects do you think utility- or government-discounted CFL bulbs have on consumer expectations regarding prices of non-discounted CFL bulbs?

    _____

14. Do you think your sales of non-discounted CFL bulbs would have been about the same, lower, or higher if the utility/government lighting buy-downs and rebates had not existed during the 2006-08 time period?

    1. *Higher*

       a. Why do you say this? _____

       b. By what percentage do you estimate your sales of non-discounted CFL bulbs would have been higher during the 2006-08 time period if the utility- or government-sponsored discounts had not existed then? [RECORD % INCREASE] _____%

          i. I want to make sure I understand you correctly. You estimate that your sales of non-discounted CFLs would have been [PERCENTAGE FROM QUESTION ABOVE] % higher without the utility- or government-sponsored discounts. So if you actually sold 100 CFLs in a given week, do you think you'd have sold about [100-(PERCENTAGE FROM QUESTION ABOVE * 100)] in that period if the utility or government discounts hadn't been available? [IF RESPONSE IS *NOT* "YES" THEN CLARIFY ESTIMATED SALES INCREASE]

             [Y/N; PROVIDE CLARIFICATION IF NECESSARY]

             _____

    2. *Lower*

       a. Why do you say this? _____

       b. By what percentage do you estimate your sales of non-specialty non-discounted CFL bulbs would have been lower during the 2006-08 time period if the utility or government-sponsored discounts had not existed then? [RECORD % DECREASE] _____%

          i I want to make sure I understand you correctly. You estimate that your sales of non-discounted CFLs would have been [PERCENTAGE FROM QUESTION ABOVE] % lower without the utility- or government-sponsored

discounts. So if you actually sold 100 CFLs in a given week, do you think you'd have sold about [100 - (PERCENTAGE FROM QUESTION ABOVE * 100)] in that period if the utility/government buy-downs and rebates had not existed during from 2006-08? [IF RESPONSE IS *NOT* "YES" THEN CLARIFY ESTIMATED SALES DECREASE]

[Y/N; PROVIDE CLARIFICATION IF NECESSARY]

_____

3. *Same*

   a. Why do you say this? _____

Early, Cumulative Effects of California Lighting Rebate Programs

15. [IF QUESTION 8 = "NO," SKIP TO QUESTION 20] You said earlier that you are familiar with California's energy-efficient lighting programs that have been providing buy-downs and rebates on CFL bulbs for many years.

    a. [IF QUESTION 3 = CA] Do you think these California programs have influenced the level of your sales of CFLs in California?

       1. *Yes*

          a) Why do you say this?

          _____

          b) Did the California programs' influence on California CFL sales vary by type of CFL? If so, how?

          _____

          c) How significant has been the influence of these years of the California buy-down and rebate programs on the price of CFLs in California? Please use a 0 to 10 scale, where 0 is not at all significant and 10 is extremely significant.

          _____

          d) Did the effect of the California programs on California's CFL sales change over the 2006-08 time period? If so, how?

          _____

       2. *No*

          a) Why do you say this?

          _____

    b. Do you think these California programs have influenced the level of your sales of CFLs in [STATES OTHER THAN CA]?

       1. *Yes*

          a) Why do you say this?

          _____

Company name/Date: _____

b) Did the California programs' influence on CFL sales in [STATES OTHER THAN CA] vary by type of CFL? If so, how?

_____

c) How significant has been the influence of these years of the California buy-down and rebate programs on the price of CFLs in [STATES OTHER THAN CA]? Please use a 0 to 10 scale, where 0 is not at all significant and 10 is extremely significant. _____

d) Did the effect of the California programs on CFL sales in [STATES OTHER THAN CA] change over the 2006-08 time period? If so, how?

_____

2. *No*

a) Why do you say this?

_____

16. For years, California lighting buy-down and rebate programs have been working to improve the performance of CFLs as well as their acceptability as substitutes for incandescent bulbs. For example, these programs have long required ENERGY STAR compliance and offered larger rebates for higher lumen levels at a given wattage level. What influences, if any, have these requirements of the California programs had on the performance of the CFLs that you sell in:

a. [IF QUESTION 3 = CA] California?

_____

b. [STATES OTHER THAN CA]?

_____

17. If the California lighting buy-down and rebate programs had not existed, do you think the performance improvements that have been made to the CFLs you sell would have happened sooner, later, or about the same time as they actually did?

1. *Sooner*

a. How much sooner would you have made these performance improvements?

_____

2. *Later*

a. How much later would you have made these performance improvements?

_____

3. *About the same time*

18. Have the California lighting buy-down and rebate programs influenced the way that you market your CFLs in:

a. [IF QUESTION 3 = CA] California?

1. *Yes*

a) How so?

_____

Company name/Date: _____

2. *No*

b. [STATES OTHER THAN CA]?

1. *Yes*

a) How so?

_____

2. *No*

19. If California eliminated its CFL buy-down and rebate programs, what effect, if any, would this have on the sales levels of CFLs in [STATE(S) OTHER THAN CA]?

_____

20. There are a number of CFL promotional campaigns sponsored by utilities and government agencies across the US—for example, US EPA's ENERGY STAR Change-a-Light promotion. Please indicate how significant you think these promotions have been as a driver of increased CFL sales in the 2006-2008 period. Please use a 0 to 10 scale, where 0 is not at all significant and 10 is extremely significant.[RECORD RATING FOR EACH PROMOTIONAL CAMPAIGN MENTIONED; PROBE FOR DETAILED CA-SPECIFIC DATA IF RESPONSE TO QUESTION 3 = CA]

_____

a. Why do you give it/them this/these rating(s)? [PROBE FOR EACH PROMOTIONAL CAMPAIGN MENTIONED; PROBE FOR DETAILED CA-SPECIFIC DATA IF RESPONSE TO QUESTION 3 = CA]

_____

21. Utility- and state/local government-sponsored buy-down and rebate programs are only some of the factors that may be encouraging sales of CFL bulbs. I'm going to name a number of possible drivers of increased CFL bulbs. For each one identified, please indicate how significant you think it is as a driver of increased CFL sales during the 2006-2008 period. Please use a 0 to 10 scale, where 0 is not at all significant and 10 is extremely significant.

1. Utility- or local/state government-sponsored buy-down and rebate programs? _____ [PROVIDE 0 TO 10 RATING]

i Why do you give this rating? _____

2. [IF QUESTION 8 = "YES"] California utility-sponsored buy-down and rebate programs? _____ [PROVIDE 0 TO 10 RATING]

i Why do you give this rating? _____

3. The ENERGY STAR program including its Change-a-Light campaign? _____ [PROVIDE 0 TO 10 RATING]

i Why do you give this rating?

_____

Company name/Date: _____

4. CFL promotional campaigns by some large retailers such as Wal-Mart, Home Depot, and Lowe's that are being done independently of any government or utility energy efficiency programs? _____ [PROVIDE 0 TO 10 RATING]

   i Why do you give this rating?

   _____

5. Media stories promoting the use of CFLs? _____ [PROVIDE 0 TO 10 RATING]

   i. Why do you give this rating?

   _____

6. Reductions in CFL production costs and price points due to lower-cost overseas manufacturing and increases in CFL production capacity? _____ [PROVIDE 0 TO 10 RATING]

   i Why do you give this rating?

   _____

7. Growing consumer awareness about global warming? _____ [PROVIDE 0 TO 10 RATING]

   i. Why do you give this rating?

   _____

8. Higher energy costs? _____ [PROVIDE 0 TO 10 RATING]

   i Why do you give this rating?

   _____

22. Have you ever received lighting products with buy-downs from the California Upstream Lighting Program in [STATE(S) OTHER THAN CA]?

    1. *Yes*

       a. When did your receive these shipments? [SPECIFY MONTH AND YEAR FOR EACH SHIPMENT] _____

       b. Approximately how many bulbs were in the/these shipment(s)? [PROBE FOR # IN EACH SHIPMENT] _____

       c. What did you do with the bulbs? [PROBE FOR RESPONSE FOR EACH SHIPMENT] _____

    2. *No*

Supply Chain Characterization and Stocking Practices

Now I would like to ask you some questions about your supply chain.

23. Of the CFLs that you sell in [STATE(S)], where are most of them manufactured?

    _____

Company name/Date: _____

24. How long does it typically take from the time that you place an order with the manufacturer or distributor to the time that you receive delivery of this order in your stores?_____

25. [IF RESPONDENT SELLS NON-SPECIALTY CFLs. I.E., IF QUESTION 2 = 1 OR 2] How long will typical shipments of *non-specialty* CFLs last in one of your stores before being sold out? _____

26. [IF RESPONDENT SELLS SPECIALTY CFLs: IF QUESTION 2 = 1 OR 3] How long will typical shipments of *specialty* CFLs last in one of your stores before being sold out?
_____

27. Do you track CFLs that are lost due to breakage and other damage?
    1. *Yes*
        a. Do you just track damage/breakage to CFLs before they reach your stores and/or also after?
            i. Both before and after they reach the store
            ii. Before they reach the store only
            iii. After they reach the store
        b. If we gave your company assurances of confidentiality, would you be willing to share information about your loss and breakage rates?
            i. Yes
            ii. *No*
        c. [IF "YES" TO B] How should we go about getting this data?
            _____
    2. *No*

Pricing

28. How much influence does your company have over the prices of the CFLs that you receive from manufacturers? Would you say that your company is very influential, somewhat influential, or not very influential?
    1. *Very Influential*
    2. *Somewhat Influential*
    3. *Not Very Influential*

29. Some retailers use something called "keystone pricing" where the retail price is set at twice what the wholesale price is. Is this how you determine the retail price for the CFLs that you sell?
    1. *Yes*
        a. For which CFLs do you use keystone pricing?
            _____

Company name/Date: _____

2. *No*
   a. How do you determine the retail price for the CFLs you sell?
   b. For which CFLs do you *not* use keystone pricing?

   _____

30. Because they were provided with utility- or government-sponsored buy-downs or rebates, some manufacturers have offered their products to certain retailers for free. Have you ever received any CFLs for free?
    1. *Yes*
       a. How do you determine the retail price for these "free" CFLs?

       _____
    2. *No*

31. CFL prices have been declining in the last 10 years. Do you think this trend will continue, or will prices level off or even increase?
    1. *Continue*
    2. *Level Off*
    3. *Increase*

    a. [FOR ANY ANSWER] What factors are causing you to make this prediction?

    _____

Market Characterization

32. How would you characterize the current market for CFLs in [STATE(S)] in terms of retailer market share? For example, are there a few major retailers responsible for the major share of product sales? Or are there a large number of major players? [IF APPLICABLE, PROBE FOR SEPARATE RESPONSES BY STATE]

    _____

33. Where would you characterize your firm in terms of market share for the [STATE(S)] CFL market? _____

34. What are the most important factors that are limiting customer demand for CFL bulbs? Please explain. [IF NECESSARY, USE PROMPTS: E.G., LACK OF AWARENESS, PRODUCT PRICING, AND PERCEPTIONS REGARDING PRODUCT PERFORMANCE, BULB FIT, APPEARANCE, EARLY BURN-OUT,ETC. RECORD WHETHER ONE HAD TO PROMPT AND RANDOMLY ROTATE THE EXAMPLES USED IN THE PROMPT]

    _____

    a. To what degree have these barriers to customer demand for CFLs varied by the type of CFL? [FOR EACH BARRIER IDENTIFIED ABOVE, PROMPT FOR HOW IT VARIES BY CFL TYPE]

       _____

    b. [IF DEMAND BARRIERS IDENTIFIED] Has there been any progress recently to reduce these barriers?

Company name/Date: _____

i. Yes

What factors lead to the reduced barriers?

_____

ii. No

c. [IF DEMAND BARRIERS IDENTIFIED] What do you think needs to happen to overcome these demand-side (customer) barriers to CFLs?

_____

35. Are you aware that in 2007 a federal Energy Bill was passed that requires new efficiency standards for light bulbs?

1. Yes

a. What do you think will be the impact of this 2007 Energy Bill on CFL sales and prices? _____

2. No

36. What are your expectations for U.S. CFL sales in 2009 and beyond?

_____

a. Why do you say that?

_____

2006-08 CFL Sales and Trends

Earlier, I e-mailed you a table that shows you a record of the types of CFL bulbs that we are interested in, along with some spaces for US bulb sales that we were hoping you could fill in.

Table 3 [IF RESPONDENT DID NOT COMPLETE TABLE, SKIP TO QUESTION 38]

Company name/Date: _____

Product Type	# of Non-Specialty Bulbs (*not* packages) Sold in U.S. 2006	2007	2008	Total 2006-08
ENERGY STAR Bulbs				
CFL 9-12 Watt; 400-650 Lumens (40W Incandescent Equivalent)				
CFL 13-15 Watt; 600-900 Lumens (60W Incandescent Equivalent)				
CFL 16-20 Watt; 900-1200 Lumens (75W Incandescent Equivalent)				
CFL 22-26 Watt; 1200-1800 Lumens (100W Incandescent Equivalent)				
Other:				
Non-ENERGY STAR Bulbs				
CFL 9-12 Watt; 400-650 Lumens (40W Incandescent Equivalent)				
CFL 13-15 Watt; 600-900 Lumens (60W Incandescent Equivalent)				
CFL 16-20 Watt; 900-1200 Lumens (75W Incandescent Equivalent)				
CFL 22-26 Watt; 1200-1800 Lumens (100W Incandescent Equivalent)				
Other:				

Product Type	# of Specialty Bulbs (*not* packages) Sold in U.S. 2006	2007	2008	Total 2006-08
ENERGY STAR Bulbs				
CFL 9-12 Watt; 400-650 Lumens (40W Incandescent Equivalent)				
CFL 13-15 Watt; 600-900 Lumens (60W Incandescent Equivalent)				
CFL 16-20 Watt; 900-1200 Lumens (75W Incandescent Equivalent)				
CFL 22-26 Watt; 1200-1800 Lumens (100W Incandescent Equivalent)				
Other:				
Non-ENERGY STAR Bulbs				
CFL 9-12 Watt; 400-650 Lumens (40W Incandescent Equivalent)				
CFL 13-15 Watt; 600-900 Lumens (60W Incandescent Equivalent)				
CFL 16-20 Watt; 900-1200 Lumens (75W Incandescent Equivalent)				
CFL 22-26 Watt; 1200-1800 Lumens (100W Incandescent Equivalent)				
Other:				

Company name/Date: _____

37. Why did you choose to sell these particular products?

    _____

    a. How did you choose what size packages to sell (2-packs, 4-packs, etc.)?
    _____ [SKIP TO QUESTION 43]

38. During the 2006-2008 period, did you sell *non-specialty* ENERGY STAR CFL bulbs in [STATE(S)]?
    1. *Yes*
    2. *No*

39. During the 2006-2008 period, did you sell *specialty* ENERGY STAR CFL bulbs in [STATE(S)]?
    1. *Yes*
    2. *No*

40. During the 2006-2008, period did you sell *non-specialty*, *non-ENERGY STAR* CFL bulbs in [STATE(S)]?
    1. *Yes*
       a. What types of CFL bulbs and packages were these non-specialty, non-ENERGY STAR bulbs? [PROMPT FOR WATTAGE, LUMENS, # IN PACKAGE, ETC.]
       _____
    2. *No*

41. During the 2006-2008, period did you sell *specialty non-ENERGY STAR* CFL bulbs in [STATE(S)] ?
    1. *Yes*
       a. What types of CFL bulb and packages were these specialty non-ENERGY STAR bulbs? [PROMPT FOR WATTAGE, LUMENS, # IN PACKAGE, ETC.]

       _____
    2. *No*

42. Please provide your best estimate of the % of non-specialty and specialty CFL bulbs that you sold in the US during the 2006-2008 period that fit into the following categories:

Company name/Date: _____

	Non- Specialty	Specialty
What % of CFL bulbs that were sold in the US were discounted during 2006- 2008 by a utility or government program?	__%	__%
CFL bulbs that met ENERGY STAR specifications but were not discounted by any program. About what % of the CFL bulbs that you sold in [STATE(S)] during the 2006-2008 period did these account for?	__%	__%
Bulbs that did not meet ENERGY STAR specifications. About what % of CFL bulbs that you sold in [STATE(S)] during the 2006-2008 period did these account for?	__%	__%
Total CFLs sold in [STATE(S)] during the 2006-2008 period	100%	100%

43. [IF RESPONDENT FILLED DATA INTO THE TABLE THAT INDICATED NON-SPECIALTY NON-ENERGY STAR CFLs] I noticed that when you filled out the table you indicated that in the 2006-2008 period you sold *non-specialty* non-ENERGY STAR CFLs in [STATE(S)]. Why do you sell these rather than just ENERGY STAR CFLs?

    _____

    a. [IF MULTIPLE REPONSES GIVEN] Which of these reasons was the most important? _____

    b. What would have to change for you to only offer ENERGY STAR CFLs for the *non-specialty* CFLs you sell?

    _____

44. [IF RESPONDENT FILLED DATA INTO THE TABLE THAT INDICATED SPECIALTY NON-ENERGY STAR CFLs] I noticed that when you filled out the table you indicated that in the 2006-2008 period you sold *specialty* non-ENERGY STAR CFLs in [STATE(S)]. Why do you sell these rather than just ENERGY STAR CFLs?

    _____

    a. [IF MULTIPLE REPONSES GIVEN] Which of these reasons was the most important?

    _____

    b. What would have to change for you to only offer ENERGY STAR CFLs for the *specialty* CFLs you sell?

    _____

45. If we provided assurances to protect the confidentiality of sales data, would you be willing to share data on pricing and the volume of your CFL sales for each state?

    1. *Yes*

Company name/Date: _____

a. What would be the next step for getting these data?

_____

2. *No*

Product Quality, Recycling

46. Do you think the quality of CFLs in recent years has been increasing, decreasing, or staying about the same?

    1. *Increasing*
    2. *Decreasing*
        a. What factors do you think might be leading to the production of lower quality CFLs?

        _____

        b. What do you think should be done to improve the quality of CFLs?

        _____
    3. *Staying the same*

47. Do you think that utility or state/local government CFL buy-down and rebate programs have affected consumer attitudes towards the quality of CFLs in any way?

    1. *Yes*
        a. In what way? _____
    2. *No*

48. How important is product quality in deciding what types or brands of CFLs you're selling in your store(s)? Would you say that quality is very important, somewhat important, or not important at all?

    1. *Very important*
    2. *Somewhat important*
    3. *Not important at all*
        a. Why do you say that? _____

49. How can you tell whether the CFLs your stores are selling are quality products?

_____

50. Is your company doing anything to assure the quality of the CFLs it sells?

    1. *Yes*
        a. What is your company doing to assure quality?

        _____
    2. *No*

Company name/Date: _____

51. Are there any CFLs you have stopped offering due to customer complaints related to quality?
    1. *Yes*
        a. What types or brands of CFLs did you stop offering due to quality concerns?
        _____
    2. *No*
52. Are you familiar with the new ENERGY STAR's "CFL Criteria Version 4.0" that was released in February 2008 and became effective in November 2008?
    1. *Yes*
        a. What do you think the impact of the new ENERGY STAR standards has been on CFLs and CFL prices?
        _____
    2. *No*
53. The disposal of CFLs has become a major issue in recent years. Do you have standard recommendations you give to customers about how to recycle their CFLs?
    1. *Yes*
        a. What are these recommendations?
        _____
    2. *No*
54. Do you offer CFL recycling on-site in any of your stores?
    1. *Yes*
    2. *No*
        a. Have you ever considered doing this?
        _____
        b. What factors or barriers might keep you from offering CFL recycling on-site?
        _____

[THANK AND TERMINATE]

Company name/Date: _____

Appendix G

2009 Nonparticipant Manufacturer and Corporate-Level Retailer Interview Findings

Appendix G: Nonparticipant CFL Manufacturer/Importer and Corporate-Level Retailer Interviews

1. OVERVIEW

To gain an understanding of current and historic CFL sales patterns, pricing trends, and other market changes from the upstream market actor perspective, the CFL Market Effects Team developed and conducted interviews with numerous CFL manufacturers/importers. Findings from our interviews with participating manufacturers/importers in 2008 were presented in the *Compact Fluorescent Lamps Market Effects Final Interim Report*, and findings from our interviews with these upstream market actor participants in 2009 are presented in Appendix E of this report. To complement the participant interviews and help us gain a broader perspective on the CFL market, we also interviewed nonparticipant manufacturers. The results of the nonparticipant interviews are the focus of this appendix.

Nonparticipant manufacturers/importers and corporate-level retailers are those who did not participate in any portion of the California IOUs' 2006–2008 Upstream Lighting Program (ULP). The interview questions posed to nonparticipant manufacturers/importers and corporate-level retailers covered such topics as CFL sales, stocking, product trends, and the potential effects of California's programs on pricing, product quality, market characterization, and CFL recycling.

Key findings from the nonparticipant manufacturer/importer interviews included:

- Respondents cited California's programs as significant drivers for increased CFL sales during 2006 and 2007, even though they did not participate in these programs.
- Respondents said reductions in production costs were in no way linked to government or utility buy-down and rebate programs.
- The respondents did not think increases in CFL quality could be linked directly to government or utility programming (in either California or elsewhere in the U.S.).
- Nonparticipant CFL manufacturers/importers said that CFL utility- or government-sponsored programs made it difficult for them compete in certain markets and such programs result in the production and sale of low-quality products.
- Most respondents said they decided not to participate in the California ULP and other utility- or government-sponsored CFL programs because they perceived the programs as requiring too much paperwork, being too expensive, and requiring too much reorganization to warrant their involvement.

Key findings from the nonparticipant corporate-level retailer interviews included:

- All respondents were relatively new market entrants: all began selling ENERGY STAR CFLs in 2007.
- The majority of respondents believed consumers' demand for CFLs is primarily driven by consumers' in reducing their energy costs.

- All respondents said they expect sales of CFLs to continue to climb.
- All respondents believe the quality of CFLs has been increasing.
- None of the respondents offered CFL recycling, nor advice on CFL recycling, at their stores.

2. METHODOLOGY

2.1 Nonparticipant Manufacturer/Importer Survey Sample

The CFL Market Effects Team sought to interview executive-level representatives of firms that manufacture CFLs available for retail sale in the U.S., but had not participated in any portion of the California IOUs' ULPs during the 2006–2008 program period. We began developing the sample by extracting the names of all CFL manufacturers/importers from our Comprehensive Shelf Stocking Study database.[1] This list was then filtered to remove the names of all manufacturers/importers that participated in California's ULPs from 2006 to 2008. Recognizing that in many cases multiple brand names fall under a single manufacturer, we took great care in removing all subsidiaries of participating manufacturers/importers from the list.

After filtering out companies that did not actually manufacture or import CFLs[2] and those that had gone out of business, only 13 manufacturers/importers remained in the sample. We obtained several contact names and e-mail addresses for each company to increase our chances of reaching the most appropriate person for the interview. The CFL Market Effects Team made a concerted effort to schedule and conduct as many interviews as possible: we telephoned each manufacturer/importer at least eight times, left at least four voicemail messages, and sent each potential respondent up to three emails. All e-mails included a letter from the CPUC verifying the legitimacy of the study, a copy of the interview guide, and an explanation of survey's purpose. We made phone calls each day of the week, at different times throughout the business day, as well as up to an hour before and after regular business hours.

To make the interviewing process as convenient for potential respondents as possible, we also offered a variety of interview options: answering the interview questions in a single sitting over the phone, in several shorter sessions over the phone, or by completing and e-mailing an electronic version of the survey instrument.

While all of the individuals we spoke with were helpful and seemingly sincere in their efforts to get us in touch with the right person, our efforts resulted in only two completed interviews.[3] Of

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1 The Comprehensive Shelf Stocking Study was conducted in the spring of 2009 in California as well as in the three comparison states of Georgia, Kansas, and Pennsylvania.

2 After researching the companies that appeared on the CFL packaging as manufacturers, we learned that some of the labels identified distributors or firms that placed their own label on products manufactured by others. In these cases we continued our research to identify the actual CFL manufacturers.

3 In the interest of full disclosure, one of the two manufacturers/importers we interviewed has been loosely involved with the 2009 "Change the World, Start with ENERGY STAR" campaign tour that The Cadmus Group is under contract to assist with. On the tour, a 30X50 foot exhibit house travels to different cities to teach local consumers about ENERGY STAR products and energy-efficient practices they can take back to their local communities. The contact we spoke with for this survey provides fixtures and bulbs for a new, interactive lighting display in the traveling house.

the 13 firms in the sample, five were unreachable and six refused to participate in the survey. Some contacts explained that participating in surveys was against company policy, others said they did not have enough time or that the appropriate contact was unavailable for an extended period of time.

2.2 Nonparticipant Corporate-Level Retailer Sample

The CFL Market Effects Team began development of the nonparticipant corporate-level retailer survey sample by purchasing from Dunn & Bradstreet data for major CFL retail channels[4] in California, Georgia, Kansas, and Pennsylvania. We eliminated participants in California, retailers without a sizable presence (three or more retail stores in at least one of the states of interest), and obviously inappropriate retailers from the list.

The final sample consisted of 24 stores in six retail channels, some of which had a retail presence in multiple states of interest to this study. The sample broken down by retail channel is shown in Table G- 1. Breakdown of Nonparticipant Retailer Sample by Retail Channel, below.

Table G- 1. Breakdown of Nonparticipant Retailer Sample by Retail Channel

Store ID	Retail Channel	States Where Present
Retailer 1	Discount	**CA, GA, KS, PA**
Retailer 2	Discount	**GA, KS, PA**
Retailer 3	Discount	**GA, KS, PA**
Retailer 4	Discount	**GA**
Retailer 5	Grocery	**PA**
Retailer 6	Grocery	**KS**
Retailer 7	Grocery	**GA, KS**
Retailer 8	Grocery	**GA**
Retailer 9	Mass Merchandise	**CA, GA, KS, PA**
Retailer 10	Mass Merchandise	**KS**
Retailer 11	Mass Merchandise	**GA**
Retailer 12	Mass Merchandise	**PA**
Retailer 13	Mass Merchandise	**CA, GA, PA**
Retailer 14	Membership	**GA, KS, PA,**
Retailer 15	Membership	**GA, PA**
Retailer 16	Membership	**GA, KS, PA,**
Retailer 17	Membership	**GA, KS, PA,**
Retailer 18	Small Hardware	**KS**
Retailer 19	Small Hardware	**KS**
Retailer 20	Large Hardware	**GA, KS, PA**
Retailer 21	Large Hardware	**GA**
Retailer 22	Large Hardware	**PA**

[4] Consistent with the retail channels used throughout this evaluation, we gathered information about discount, drug, grocery, small hardware, large home improvement, mass merchandise, and membership club stores.

Store ID	Retail Channel	States Where Present
Retailer 23	Large Hardware	**GA, KS, PA**
Retailer 24	Large Hardware	**PA**
Retailer 25	**Large Hardware**	**PA**

The Team made a concerted effort to schedule and conduct as many interviews as possible: we used both telephone calling and e-mail to reach potential respondents. As with outreach to manufacturers/importers, we telephoned each retailer contact at least eight times, left at least four voicemail messages, and sent each potential respondent up to three e-mails. We made phone calls each day of the week, at different times throughout the business day, as well as up to an hour before and after regular business hours. All e-mails included a letter from the CPUC verifying the legitimacy of the study, a copy of the interview guide, and an explanation of survey's purpose. In an attempt to increase the number of respondents, we sent follow-up e-mails that included an easy-to-follow, color-coded version of the survey, enabling retailers to electronically complete the survey at their convenience.

Our efforts resulted in four interviews completed interviews.

2.3 Nonparticipant Manufacturer/Importer and Corporate-Level Retailer Interview Guides

The Nonparticipant CFL Manufacturer/Importer and Corporate-Level Retailer Interview Guides were developed by adapting the participant manufacturer/importer and participant retailer interview guides, respectively. This effort required modifying questions for respondents who may have been unfamiliar with the California IOUs' lighting programs and who had limited knowledge of the CFL market and retailers in California. Several questions were also changed from being California-focused to having an "outside-California" or national focus.

Both interview guides included batteries of questions about familiarity with different types of CFLs, CFL product sales and trends, potential effects of California's programs on the broader CFL market, other (non-program) market drivers, pricing, product quality, market characterization, and CFL recycling.

Both the Nonparticipant Manufacturer/Importer Interview Guide and the Nonparticipant Corporate-Level Retailer Interview Guide are presented in Appendix F.

3. FINDINGS

3.1 Nonparticipant Manufacturers/Importers

The two nonparticipant manufacturers/importers interviewed produce non-specialty and specialty CFLs.[5] Both manufactured bulbs in China and sold bulbs in all 50 states as well as internationally. They had very similar perspectives regarding both government and utility buy-

[5] Non-specialty CFLs were defined as those that do not have special functions or features such as reflectors, dimmability, three-way light levels, or flood lighting.

down or rebate programs as well as the California utilities programming in 2006–2008. One had participated in a few programs since 2007, but not in California, while the other had never participated in any CFL buy-down or rebate programs in any state.

3.1.1 Perceived Effect of Utility- and Government-Sponsored Programs and Other Market Drivers on the CFL Market

Both manufacturer/importer respondents said that CFL promotional campaigns sponsored by utilities and government agencies across the U.S.—such as the U.S. EPA's ENERGY STAR Change-a-Light promotion—have had a significant effect on the CFL market. The two respondents explained that these types of campaigns brought awareness to consumers and boosted sales. In fact, both respondents recognized the California utilities' programs as playing leadership roles in the marketing of CFLs, educating the public, and leading the country by example in buy-down and rebate programs.

The two nonparticipant manufacturers/importers described additional positive effects utility- and government-sponsored CFL programs have had on the CFL market, though their explanations differed:

- One respondent said California's CFL programs (as well as government-run programs) improved consumers' attitudes toward CFLs by educating the public on how to identify high-quality products; the other respondent did not think California's ULPs had changed consumers' attitudes at all.
- One respondent said the programs influenced their company's marketing by providing a message the company used in its own advertising (thereby sending a consistent message to consumers). The other respondent, in contrast, said the California ULPs and others CFL programs influenced their marketing only by forcing them to lower prices, thereby reducing profitability.

Both companies also cited several ways in which they had been adversely affected by utility- and government sponsored CFL programs, including loss of sales, decreases in profitability, and the inability to sell CFL products in certain geographic areas.

When asked whether other (i.e., non-program) factors, such as higher energy costs and growing awareness of climate change, had been significant drivers in increasing CFL product sales in 2006–2008, one respondent thought these factors were important while the other did not.

3.1.2 Perceived Effect of Utility- and Government-Sponsored Programs on CFL Production Costs

The nonparticipant respondents agreed that production costs had dropped over the last 10 years, but neither thought government and utility rebate/buy-down programs had affected their production costs. Both mentioned improvements in technologies and factory lines, increases in the number of manufacturers, and process efficiency improvements as the reasons for their production cost reductions. When prompted, neither could imagine how utility- or government-sponsored CFL programs could have affected their production costs. "I don't see the connection, it seems like a stretch," commented one.

3.1.3 Perceived Effect of Utility- and Government-Sponsored Programs on CFL Quality

Both respondents felt their products would have continued to increase in quality whether or not the programs existed; neither thought CFL programs had had any effect on their quality improvements. Oftentimes, they explained, their products already exceeded the ENERGY STAR standards. The two respondents also said they sell CFLs that meet ENERGY STAR criteria but do not have the ENERGY STAR label because it is too costly to have every bulb temperature tested. However, both respondents recognized the importance of having a common set of standards and were well aware of the cheaper CFL products that do not meet ENERGY STAR requirements.

When we asked the nonparticipant manufacturers/importers whether the quality improvements they have made to their CFLs over the past several years would have happened sooner, later, or at about the same time without utility- and government-sponsored CFL programs, both replied "at the same time." Their motivation to increase quality, they explained, came from a desire to remain competitive, not to adhere to a program standard.

3.1.4 Reasons for Not Participating in the ULPs

Although one manufacturer/importer had participated minimally in some government and utility buy-down and rebate programs, the other had not. Both cited excessive paperwork as the primary reason they chose not to participate in California (and elsewhere). One also cited program-stipulated packaging requirements as too expensive and explained, "When we have to change our entire packing system just to fit into a program, financially it just doesn't make sense." He continued, "Many of these programs end up 'pay to play' programs for us, and we just do not move enough product."

While both acknowledged that, though they lost sales and were unable to compete in some markets due to their nonparticipation status, there were benefits to not participating. Some retailers seek out nonparticipant manufacturers/importers because these retailers, too, find CFL program paperwork to be very cumbersome. One of the manufacturers noted that its retailer customers did not sell sufficient quantities of CFLs to qualify for the California CFL programs.

3.2 Nonparticipant Corporate-Level Retailers

One of the four nonparticipant corporate-level retailers we interviewed sold only non-specialty CFLs, while the other three sold both specialty and non-specialty. Two of the four respondents had stores in California and were aware of the California IOUs' ULPs; the two retailers without a presence in California were not aware of any utility- or government CFL rebate/buy-down programs including the ENERGY STAR *Change-a-Light* campaign. These latter retailers had never offered their own rebates or price discounts on ENERGY STAR CFLs nor had they sold state or local government or utility discounted CFLs outside of California.

All of the nonparticipant retailers we spoke to began selling ENERGY STAR CFLs in 2007. They gave a variety of reasons for beginning to offer CFLs in their stores, including the desire to stay competitive, direction from a parent store, customer demand, and vendors who had introduced them to CFLs.

3.2.1 Perceived Effect of Utility- and Government-Sponsored Programs and Other Market Drivers on the CFL Market

One of the two respondents who was aware of California's ULPs said that utility- and government-sponsored CFL programs had a somewhat significant impact on the increase of CFL sales during the 2006–2008 time period. This respondent thought the California utility-sponsored CFL program had more of an effect on CFL sales in California than the ENERGY STAR program because "people don't always hear about it [the ENERGY STAR program]."

Neither of the respondents who were aware of the California ULPs believed the programs influenced sales of CFLs in other states. As one of the retailers put it: "…I think people want the rebates in their areas. And, you know, they react to the price in their hometown. I don't think that they're looking at what California is doing."

Two of the respondents said media stories had an effect on CFL sales, and two thought that higher energy costs definitely motivated consumers to purchase CFLs. When queried about the significance of global warming as a driver for CFL sales, one respondent said, "Our customers really couldn't care less," while another replied, "Some think about it, some don't."

Two of the respondents were aware of the 2007 federal energy bill that requires new efficiency standards for light bulbs, and both said they expected the bill to lead to increased CFL purchases.

3.2.2 CFL Pricing Strategies

Two of the nonparticipant retailers we spoke to provided information about their CFL pricing strategies. Both established prices based on their desire to remain competitive; neither used keystone pricing. One of these retailers sold both utility- government-discounted CFLs. This respondent elaborated that his store set specific prices for utility-discounted CFLs, but priced government-discounted CFLs based on a specific margin. The retailer commented that this variation in pricing confuses consumers and they "don't understand the program or why there are discounts and what a 'normal' price is."

One of the respondents with a presence in California believed that the sales of non-discounted CFLs would have been the same regardless of the utility- and government- lighting rebates/buy-downs that were available during the 2006–2008 period. From the respondent's perspective, "people come in for bulbs specifically. They are not an impulse buy, so they will buy whatever is available to them when they need them."

Two of the three retailers thought the price of CFLs would level off in the future, while one believed prices would continue to decline. (The fourth did not reply to this question.)

3.2.3 Barriers to CFL Sales

Respondents said both a lack of awareness and high prices were the primary factors limiting consumer demand for CFLs.

3.2.4 Product Quality, Recycling

All of the three respondents who answered quality-related questions believed the quality of CFLs has been increasing over time. One respondent said he tested the CFL products he sold to ensure

they were of good quality; the other two respondents said they relied solely on customer feedback to ensure quality.

Finally, none of the three respondents who answered questions about recycling offered any CFL recycling options to their customers. Reasons for this included the need for direction from the parent company and cost. None of the respondents had an opinion about the effect of utility- or government-sponsored CFL programs on CFL product quality or recycling.

Appendix H
Store-Level Retailer Survey Instrument and Sampling Plan

Store-Level Lighting Retailer Survey Sampling Plan For California Participants, California Nonparticipants, and Comparison Area Nonparticipants

Overview

The Store-Level Lighting Retailer Telephone Survey was developed for use in both the Residential Retrofit (Res Retrofit) impact evaluation and the Compact Fluorescent Market Effects (CFL ME) evaluation of the California investor-owned utilities' (IOUs) 2006-08 Upstream Lighting Program (ULP).[1] For the Res Retrofit study, the survey was designed to inform the net-to-gross analysis; for the CFL ME study, the survey was designed to be used in the comparison state analysis. The Store-Level Retailer Telephone Survey will be fielded in Spring/Summer 2009 by PA Consulting and The Cadmus Group. It will be administered to individual storefront lighting department and store managers, and includes batteries of questions about lighting sales, stocking, and pricing patterns.

The Res Retrofit and CFL ME sample sizes were established in the Residential Retrofit Evaluation Plan and the CFL Market Effects Scoping Study Findings and Work Plan, respectively. Total participant and nonparticipant sample sizes for both California and the comparison states are shown in Table 1.

Table 1. Total Sample Sizes Retailer Store Manager Surveys

Study	California		Comparison States*
	Participants	Nonparticipants	Nonparticipants
Res Retrofit	300	0	0
CFL ME	0	50	100
* Comparison state sample sizes are per state.			

The remainder of this document describes the approach the Res Retrofit and CFL ME Teams will use to stratify the California and comparison state samples geographically within each state, by retailer size, and by distribution channel. The resulting stratified sample sizes are also presented below.

[1] Note that this Store-Level Lighting Retailer Telephone Survey is a separate effort from the *corporate*-level retailer survey also being undertaken for the Res Retrofit and CFL ME evaluations. The corporate-level retailer surveys are being conducted by KEMA and include:

- As part of the Res Retrofit project, two rounds of 25 interviews each with corporate-level participant retailer representatives, and
- As part of the CFL ME project, up to five interviews with corporate-level nonparticipant retailer representatives in California and another five interviews with corporate-level nonparticipant retailer representatives in the comparison states.

California Participant Sampling Plan

The Team will develop the sample of participating retailers from the California IOUs' ULP participant databases. To ensure the California participant sample is geographically representative of 2006-2008 ULP participation, the first step in stratifying this sample is to examine the distribution of CFL shipments by IOU service area. This distribution, and the California participant sample sizes by IOU service area based on this distribution, are shown in Table 2.

Table 2. California Participant Stratification by Utility Service Area

Utility	2006-08 ULP CFL Shipments	% of Total Shipments	Proposed Participant Sample Size
PG&E	42,347,026	45%	144
SCE	33,367,495	36%	118
SDG&E	6,524,645	7%	38
Total	93,467,454	100%	300

While the large chain stores within the California IOUs' service areas may have sold the largest number of program bulbs, they did not represent the majority of participant storefronts. We wanted to develop a sample of retailers that would appropriately represent the varying opinions and decisions of the numerous independently-owned participating retailers as well as those of the small and large chain stores. For these purposes, we categorized retailers with fewer than four storefronts with the same name in California as independents, retailers with 4 to 8 storefronts of the same name in California as small chains, and retailers with more than 8 storefronts of the same name in California as large chains (Table 3).

Table 3.Storefront Size Categories

Size Category	Number of Storefronts
Independent	< 4
Small chain	4 to 8
Large chain	> 8

To develop a participant retailer sample that accurately represents 2006-08 ULP activity, the Team need to stratify the sample by retail channel and by storefront size. For each IOU sample, we therefore applied the distribution of retailer participants by size and retail channel from the ULP databases. These distributions, along with the proposed sample size for each utility service area are shown for PG&E, SCE, and SDG&E in Table 4, Table 5, and Table 6, respectively. As these tables illustrate, over 90% of participating ULP retailers are independently-owned. The bulk of the interviews will therefore be conducted among representatives from independently-owned stores.

Table 4. PG&E Participant Retailer Sampling Plan

Retail Channel	Independent		Large Chain		Small Chain		Total Sample Size by Distribution Channel
	ULP Stores	Sample	ULP Stores	Sample	ULP Stores	Sample	
Discount	9%	13	1%	1	0%	-	14
Drug	2%	2	1%	1	0%	-	3
Grocery	52%	56	2%	3	2%	3	62
Hardware	24%	34	0%	-	1%	1	35
Home Improvement	0%	-	1%	10	0%	-	10
Mass Merchandise	0%	-	0%	10	0%	-	10
Membership Club	0%	-	0%	10	0%	-	10
Total	92%	105	5%	35	3%	4	144

Table 5. SCE Participant Retailer Sampling Plan

Retail Channel	Independent		Large Chain		Small Chain		Total Sample Size by Distribution Channel
	ULP Stores	Sample	ULP Stores*	Sample	ULP Stores	Sample	
Discount	29%	34	1%	1	1%	1	36
Drug	1%	1	1%	1	0%	-	2
Grocery	53%	53	2%	2	3%	4	59
Hardware	4%	4	1%	1	1%	1	6
Home Improvement	0%	-	1%	5	0%	-	5
Mass Merchandise	0%	-	0%	5	0%	-	5
Membership Club	0%	-	0%	5	0%	-	5
Total	90%	92	5%	20	5%	6	118
* Values do not add to total due to rounding.							

Table 6. SDG&E Participant Retailer Sampling Plan

Retail Channel	Independent		Large Chain		Small Chain		Total Sample Size by Distribution Channel
	ULP Stores*	Sample	ULP Stores	Sample	ULP Stores	Sample	
Discount	6%	2	3%	1	1%	-	3
Drug	0%	-	1%	1	1%	-	1
Grocery	53%	10	4%	1	10%	2	25
Hardware	5%	2	2%	1	2%	1	4
Home Improvement	0%	-	2%	3	0%	-	1
Mass Merchandise	0%	-	1%	2	1%	-	-
Membership Club	1%	-	1%	2	0%	-	-
Total	70%	24	15%	11	16%	3	38
* Values do not add to total due to rounding.							

After the lists of participant retailers from each of the IOUs have been stratified according to the scheme described above, the Team will draw the California participant sample from randomly selected retailers within each strata.

California Nonparticipant Sampling Plan

As with the California participant sample, California's nonparticipant sample will first be stratified by program shipments by utility (Table 7).

Table 7. California Nonparticipant Stratification by Utility Service Area

Utility	2006-2008 ULP Bulb Shipments	Percent of Total Shipments	Proposed Non-Participant Surveys
PG&E	45,975,037	48%	24
SCE	37,853,993	39%	20
SDGE	12,072,659	13%	6
Total	95,901,689	100%	50

Stratification by store size within each IOU service area will mirror that used above for the participant sample, and stratification by retail channel will be the same as that used in the Shelf Stocking Survey.[2] Nonparticipant retailer sampling plans for the PG&E, SCE, and SDG&E service areas are shown in Table 8, Table 9, and Table 10, respectively, below.

[2] The sampling plan for the "Shelf Stocking Survey" referred to here was developed for the Abbreviated Shelf Stocking Survey (conducted as part of the Res Retrofit study) and the Comprehensive Shelf Stocking Survey (conducted as part of the CFL ME project) in combination. Please refer to the Comprehensive Shelf Survey instrument for the details of that sampling plan.

Table 8. PG&E Nonparticipant Retailer Sampling Plan

Retail Channel	Shelf Survey Distribution by Channel	Total Sample Size by Distribution Channel
Discount	17%	4
Drug	12%	3
Grocery	24%	3
Hardware	12%	3
Home Improvement	15%	3
Mass Merchandise	21%	5
Membership Club	0%	3
Total	100%	24

Table 9. SCE Nonparticipant Retailer Sampling Plan

Retail Channel	Shelf Survey Distribution by Channel	Total Sample Size by Distribution Channel
Discount	17%	3
Drug	12%	2
Grocery	24%	3
Hardware	12%	2
Home Improvement	15%	3
Mass Merchandise	21%	5
Membership Club	0%	2
Total	100%	20

Table 10. SDG&E Nonparticipant Retailer Sampling Plan

Retail Channel	Shelf Survey Distribution by Channel	Total Sample Size by Distribution Channel
Discount	17%	1
Drug	12%	0
Grocery	24%	1
Hardware	12%	1
Home Improvement	15%	1
Mass Merchandise	21%	1
Membership Club	0%	1
Total	100%	6

In California, non-participant retail surveys will include large chains, such as Ikea, Kmart, and Target, as well as some independent stores that did not chose to participate. There will be a mix of independent, large, and small chain stores.

Comparison State (Nonparticipant) Sampling Plan

The stratification of the retailer sample by retail channel in the comparison states will mirror that used for the CFL ME Comprehensive Shelf Stocking Survey. This stratification is shown in Table 11.

Table 11. Comparison State Retailer Sampling Plan

	Pennsylvania			Georgia			Kansas		
	Shelf Stocking Sample	Retailer Sample Size		Shelf Stocking Sample	Retailer Sample Size		Shelf Stocking Sample*	Retailer Sample Size	
Retail Channel	%	N	%	%	N	%	%	N	%
Grocery	15%	15	15%	15%	15	15%	15%	15	15%
Mass merchandise	25%	25	25%	20%	20	20%	23%	23	23%
Membership clubs	15%	15	15%	15%	15	15%	15%	15	15%
Discount (such as 99 Cent, Dollar Store)	15%	15	15%	15%	15	15%	15%	14	14%
Drug	0%	0	0%	0%	0	0%	0%	0	0%
Large Home Improvement (such as Home Depot, Lowe's)	30%	30	30%	35%	35	35%	23%	23	23%
Small Hardware	0%	0	0%	0%	0	0%	10%	10	10%
Total	100%	100	100%	100%	100	100%	100%	100	100%

* Values do not add to total due to rounding.

While onsite fielding the CFL ME Comprehensive Shelf Stocking Survey, which was conducted at 40 stores in each of the comparison states, Cadmus surveyors attempted to complete retailer surveys with lighting department or (as applicable) store managers at those sites. These 40 surveys are included in the sample of 100 per state.[3] The remaining sample will be drawn from a random-digit dial based on the retail channel stratification shown above.

[3] We were able to complete only about 25% of the retailer surveys while onsite. Follow-up telephone interviews with lighting managers at the remaining 75% of the shelf survey stores will be the highest priority for the comparison state telephone survey effort.

2006-2008 Upstream Lighting Program
Store/Lighting Manager Survey

[California Participants] Hello, my name is [interviewer name], and I'm calling on behalf of the California Public Utilities Commission regarding energy efficient light bulbs that may have been discounted through California's Upstream Lighting Program.

[GA, PA, & KS Participants] Hello, my name is [interviewer name], and I'm calling on as part of a national lighting study funded by the California Public Utilities Commission. This study is evaluating the saturation, awareness, and product availability of different types of energy efficient lighting throughout the country.

[Provide name and number of corporate level study endorsement, if available]

May I speak with someone in your store who deals with stocking and supplying your lighting products such as light bulbs?

1 Yes

2 No [Attempt to get respondent; if respondent not available, ask if anyone else at the establishment makes purchasing or stocking decisions. IF NOT a good time to talk, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-XXX-XXXX]

I'm not selling anything; I'd just like to ask your opinion about this program energy efficient lighting trends. I can assure you that your responses will be kept confidential and your individual responses will not be revealed or to anyone.

Potential Questions

Who is doing this study? The California Public Utilities Commission, which regulates the utilities and is overseeing evaluations of most of California's energy efficiency programs.

Why are you conducting this study? Studies like this help the State of California and the electric and gas utilities better understand the energy savings that result from Investor Owned Utility (IOU) energy efficiency programs.

If accused of sales call. I am not selling anything. I would simply like to learn about your experience with the light bulbs that were discounted through [UTILITY]'s Residential Lighting Incentive Program. Your responses will be kept confidential. If you would like to talk with someone from the California Public Utilities Commission about this study, feel free to call Mikhail Haramati at 415-703-1458, or visit their website: www.cpuc.ca.gov/eevalidation.

Database References/Piping

Note that non-participating retailers will only be asked the questions marked with a green "NP". Participating retailers will be asked the entirety of the survey.

[UTILITY]

PG&E

SCE

SDG&E

[timeframe]

Year(s)

[Bulbs]

Number of incentivized bulbs shipped to location

Section 1. Respondent Information

RI1. We are evaluating California's Upstream Lighting Program and our records show that you may have received some discounted compact fluorescent lights from [UTILITY] as part of the program. Are you familiar with the stocking patterns or sales trends for the lighting products that you sell?

(IF THEY ASK WHY, SAY: "This study will help us understand the impact this program has had on energy efficiency lighting. We would like to learn more about your experience with stocking and selling energy efficient bulbs and fixtures.")

1 Yes	[SKIP TO INTRO2]
2 No	
R (Refused)	[THANK AND TERMINATE]

RI2. May I please speak with a person more familiar with the stocking patterns and sales trends for the lighting products sold at your store? (IF REFERRED TO CORPORATE: "Right now we are looking for input at the store level; corporate-level surveys are being conducted as another part of this study. Is there someone at your store I can speak with?")

1	Yes	
2	No	[ATTEMPT TO RESCHEDULE]
D	(DON'T KNOW)	[TERMINATE]
R	(REFUSED)	[TERMINATE]

RI3. (WHEN NEW PERSON IS ON LINE) Are you the person at your store who is most familiar with the stocking patterns or sales trends for the lighting products that you sell?

1	Yes	[IF NP, then SKIP TO LEAD IN]
2	No	[SKIP BACK TO RI2]
D	(DON'T KNOW)	[SKIP BACK TO RI2]
R	(REFUSED)	[TERMINATE]

Intro2. PARTICIPANTS ONLY According to our records, your store has participated in the [UTILITY] Residential Lighting Incentive Program also referred to as the Upstream Lighting Program. This program pays lighting manufacturers $0.50-$3.50 per compact fluorescent bulb and $10 per compact fluorescent lighting fixture so that they can provide these products to retailers at discounted prices. The packaging on these discounted bulbs have labels with [UTILITY]'s name on it.

RI4. Do you recall ever receiving a shipment of CFL bulbs that were discounted through the program?

1 Yes [SKIP TO ST1]

2 No

D (Don't Know)

R (Refused)

RI5. Would anyone else at the store be familiar with this program?

1 Yes [SKIP BACK TO RI2]

2 No [SKIP TO ST2 (NP Questions)]

D (Don't Know) [TERMINATE]

R (Refused) [TERMINATE]

LEAD IN: I have a few questions about your lighting stock. Is now a good time?

1 Yes [NP Skip to ST2, else continue]

2 No [ATTEMPT TO RESCHEDULE]

Section 2. Stocking

For these first questions, we're going to review your ***stocking*** patterns for light products.

ST1. Which of the following lighting types has your store stocked that are discounted by [UTILITY]: (ALLOW MULTIPLE ANSWERS)

1 Standard ENERGY STAR compact fluorescent bulbs, or CFLs, that are 30 watts or less? By "standard ENERGY STAR compact fluorescents" I mean bulbs with the ENERGY STAR label that are not dimmable or reflectors, and that have just one light level.

2 Specialty CFLs, such as dimmable, 3-way, spotlights, or reflector CFLs?

3 Energy Star qualified CFL fixtures?

D (Don't Know)

R (Refused)

ST2. Which of the following CFL lighting types does your store stock that are NOT discounted through any [UTILITY] energy efficiency program: (ALLOW MULTIPLE ANSWERS)

N

1 Standard ENERGY STAR compact fluorescent bulbs that are 30 watts or less? (IF ASKED, SAY: By "standard ENERGY STAR compact fluorescents" I mean CFLs with the ENERGY STAR label that are not dimmable or reflectors, and that have just one light level.)

2 Specialty CFLs, such as dimmable, 3-way, spotlights or reflector CFLs?

3 ENERGY STAR qualified CFL fixtures?

4 Other (SPECIFY) _____

D (Don't Know)

R (Refused)

ST3. Did you carry ENERGY STAR CFL bulbs prior to participating in the [UTILITY] Upstream Lighting Program? (IF DOESN'T UNDERSTAND UPSTREAM LIGHTING PROGRAM SAY: "Prior to receiving [UTILITY] discounted bulbs")

1 Yes

2 No

D (Don't Know)

R (Refused)

N

ST4. Which of the following types of non-CFL lighting to you stock on a regular basis:

1 Incandescent bulbs
2 Halogens
3 LED lights
4 Other (SPECIFY) _____

D (Don't Know)

R (Refused)

NP

ST5. According to your best estimate, what percentage of the lighting products currently on your sales floor can be attributed to the following lighting types:

ST5a. CFLs _____%
ST5b. LEDs _____%
ST5c. Incandescent bulbs _____%
ST5d. Other _____%

(SHOULD ADD UP TO 100%)

NP

ST6. Does the light bulb stocking pattern you just described reflect your typical stocking pattern?

1 Yes [SKIP TO ST8]

2 No

D (Don't Know) [SKIP TO ST8]

R (Refused) [SKIP TO ST8]

NP

ST7. How does it differ? (PROBE: QUANTITIES AND/OR TYPES OF BULBS OFFERED; ALSO PROBE FOR PERCENT INCREASE OR DECREASE TODAY AS COMPARED TO THE SAME TIME LAST YEAR)

_____ (OPEN-END)

NP

ST8. Is the current stocking pattern you described similar to the stocking pattern this time last year (May/June 2008)?

1 Yes [SKIP TO ST10]

2 No

D (Don't Know) [SKIP TO ST10]

R (Refused) [SKIP TO ST10]

NP

ST9. How does it differ? (PROBE: QUANTITIES AND/OR TYPES OF BULBS OFFERED; ALSO PROBE FOR PERCENT INCREASE OR DECREASE TODAY AS COMPARED TO THE SAME TIME LAST YEAR)

_____ (OPEN-END)

[ASK IF ST5a >0]

NP

ST10. Given the CFL stock you currently have on your sales floor, how many weeks do you estimate it would take to sell out ***all*** of your CFL bulbs if you did not restock them?

_____ Weeks (IF UNSURE, SAY: "Your best guess is fine.")

[ASK IF ST5c>0]

NP

ST11. How many weeks would it take to sell out of the incandescent bulbs currently on your sales floor if you did not restock them ?

_____ Weeks (IF UNSURE, SAY: "Your best guess is fine.")

[ASK IF ST1=1]

ST12. On Average, how many weeks do you estimate it would take to sell out ***all*** of the [UTILITY] Upstream Lighting Program CFL bulbs from a single shipment of program bulbs?

_____ Weeks (IF UNSURE, SAY: "Your best guess is fine.")

[ASK IF ST2=1]

NP

ST13. Do you stock ***standard ENERGY STAR*** CFLs year round? (IF ASKED, SAY: By "standard ENERGY STAR compact fluorescents" I mean CFLs with the ENERGY STAR label that are not dimmable or reflectors, and that have just one light level.)

1 Yes [SKIP TO ST15]

2 No

D (Don't Know) [SKIP TO ST15]

R (Refused) [SKIP TO ST17]

NP

ST14. Why not?

(RECORD RESPONSE) _____

D (Don't Know)

R (Refused)

NP

ST15. Does your stocking pattern for ***standard ENERGY STAR*** CFLs have seasonal cycles or otherwise fluctuate during the year?

1 Yes

2 No [SKIP TO ST17]

D (Don't Know) [SKIP TO ST17]

R (Refused) [SKIP TO ST17]

NP

ST16. Please describe when during the year your stocking pattern for ***standard ENERGY STAR*** CFLs fluctuates and, for each of these time periods, the percentage increase or decrease in stock compared to today.

Time of Year	% Change	Increase/ Decrease
		(Increase/ Decrease)
		(Increase/ Decrease)
		(Increase/ Decrease)
		(Increase/ Decrease)

[PROBE FOR SEASONAL—SPRING, SUMMER, FALL, WINTER. ALSO PROBE FOR EVENTS/PROMOTIONS—EARTH DAY (SPRING), *CHANGE A LIGHT, CHANGE THE WORLD* (FALL), UTILITY PROMOTIONS, OTHER]

[ASK IF ST1=1]

ST17. Do you stock ***[UTILITY]-discounted*** CFLs year round?

1 Yes

2 No

D (Don't Know) [SKIP TO ST20]

R (Refused) [SKIP TO ST20]

ST18. Does your stocking pattern for ***[UTILITY]-discounted*** CFLs have seasonal cycles or otherwise fluctuate during the year?

1 Yes

2 No [SKIP TO ST20]

D (Don't Know) [SKIP TO ST20]

R (Refused) [SKIP TO ST20]

ST19. Please describe when during the year your stocking pattern for ***[UTILITY]-discounted*** CFLs fluctuates and, for each of these time periods, the percentage increase or decrease in stock compared to today.

Time of Year	% Change	Increase/ Decrease
		(Increase/ Decrease)
		(Increase/ Decrease)
		(Increase/ Decrease)
		(Increase/ Decrease)

(PROBE FOR SEASONAL—SPRING, SUMMER, FALL, WINTER. ALSO PROBE FOR EVENTS/PROMOTIONS—EARTH DAY (SPRING), *CHANGE A LIGHT, CHANGE THE WORLD* (FALL), UTILITY PROMOTIONS, OTHER)

D (Don't Know)

R (Refused)

[ASK IF ST1 = 2 or ST2 =2 ELSE SKIP TO ST23]

NP

ST20. You said earlier that you sell specialty CFLs such as dimmable, 3-way, or reflector CFLs. Do you stock ***specialty*** CFLs year round?

1 Yes

2 No

D (Don't Know)

R (Refused)

NP

ST21. Does your stocking pattern for ***specialty*** CFLs have seasonal cycles or otherwise fluctuate during the year?

1 Yes

2 No [SKIP TO ST23]

D (Don't Know) [SKIP TO ST23]

R (Refused) [SKIP TO ST23]

NP

ST22. Please describe when during the year your stocking pattern for ***specialty*** CFLs fluctuates and, for each of these time periods, the percentage increase or decrease in stock compared to today.

Time of Year	% Change	Increase/ Decrease
		(Increase/ Decrease)
		(Increase/ Decrease)
		(Increase/ Decrease)
		(Increase/ Decrease)

(PROBE FOR SEASONAL—SPRING, SUMMER, FALL, WINTER. ALSO PROBE FOR EVENTS/PROMOTIONS—EARTH DAY (SPRING), *CHANGE A LIGHT, CHANGE THE WORLD* (FALL), UTILITY PROMOTIONS, OTHER)

D (Don't Know)

R (Refused)

[ASK IF ST1 = 3 or ST2 = 3 ELSE SKIP TO ST24]

NP

ST23. Do you stock ***ENERGY STAR CFL fixtures*** year round?

1 Yes

2 No

D (Don't Know)

R (Refused)

NP

ST24. Does your stocking pattern for ***ENERGY STAR CFL fixtures*** stocked have seasonal cycles or otherwise fluctuate during the year?

1 Yes

2 No [SKIP TO ST26]

D (Don't Know) [SKIP TO ST26]

R (Refused) [SKIP TO ST26]

NP

ST25. Please describe when during the year your stocking pattern for ***ENERGY STAR CFL fixtures*** fluctuates and, for each of these time periods, the percentage increase or decrease in stock compared to today.

ST26.

Time of Year	% Change	Increase/ Decrease
		(Increase/ Decrease)
		(Increase/ Decrease)
		(Increase/ Decrease)
		(Increase/ Decrease)

(PROBE FOR SEASONAL—SPRING, SUMMER, FALL, WINTER. ALSO PROBE FOR EVENTS/PROMOTIONS—EARTH DAY (SPRING), *CHANGE A LIGHT, CHANGE THE WORLD* (FALL), UTILITY PROMOTIONS, OTHER)

D (Don't Know)

R (Refused)

NP

ST27. In the last year, has the number of models of ENERGY STAR light bulbs that your store carries gone up, down, or remained the same.

1 Up/Carrying more

2 Down/Carrying less

3 Same/Carrying the same (e.g. it hasn't affected the stock)

D (Don't Know)

R (Refused)

NP

ST28. How about over the past three years? Has the number of models of energy efficient light bulbs that your store carries over the past three years gone up, down, or remained the same.

1 Up/Carrying more

2 Down/Carrying less

3 Same/Carrying the same (e.g. it hasn't affected the stock)

D (Don't Know)

R (Refused)

NON PARTICIPANTS SKIP TO TR13

[ASK IF ST1 =1,2,3]

ST29. *How* has participating in the program affected the number of *model*s of ENERGY STAR light bulbs that your store carried in the last year?

1 Carrying more

2 Carrying less

3 Carrying the same (e.g. it hasn't affected the stock)

D (Don't Know)

R (Refused)

ST30. How about over the past three years? How has participating in the program affected the number of *models* of ENERGY STAR light bulbs that your store carried over the past three years (2006-2008)?

1 Carrying more

2 Carrying less

3 Carrying the same

D (Don't Know)

R (Refused)

[ASK IF ST1=1,2, or 3]
Now, let's focus on the [UTILITY]-discounted bulbs you received.

ST31. Our records indicate that approximately [Bulbs] [UTILITY]-discounted bulbs were shipped to your store during 2006-2008. What percent of those bulbs were sold as of December 31, 2008?
(RECORD RESPONSE) _____%

D (Don't Know)

R (Refused)

[ASK IF ST31<%100]

ST32. Do you still have 2006-2008 [UTILITY]-discounted bulbs available at your store?

1 Yes

2 No [SKIP TO ST36]

D (Don't Know) [SKIP TO ST36]

R (Refused) [SKIP TO ST36]

ST33. What type of 2006-2008 [UTILITY]-discounted bulbs are available? (ALLOW MULTIPLE RESPONSES)

1 Standard, twister style CFL bulbs

2 Specialty CFLs, such as dimmable, 3-way, spotlights, or reflector CFLs

D (Don't Know)

R (Refused)

ST34. What percentage of the [Bulbs] 2006-2008 [UTILITY]-discounted bulbs are still available at your store?
(RECORD RESPONSE) _____% [SKIP TO ST36]

D (Don't Know) [SKIP TO ST36]

R (Refused) [SKIP TO ST36]

[ASK IF ST31 = 100%]

ST35. Approximately when were the rest of the 2006-2008 program bulbs sold out?
1 (RECORD MONTH/YEAR) _____
2 We still have 2006-2008 bulbs available
D (Don't Know)
R (Refused)

ST36. How long did a typical shipment of discounted CFLs last before being sold out?
(RECORD ESTIMATE AND RELEVANT UNIT OF TIME (DAYS, WEEKS, MONTHS)) ____
D (Don't Know)
R (Refused)

ST37. If the supply of [UTILITY]-discounted CFLs in your store sells out, what do you (or did you) typically do? (CIRCLE ALL THAT APPLY)
1 Re-order more [UTILITY]-discounted products
2 Continue selling this same product at a non-discounted price.
3 Continue selling this same product at a discount provided by the retailer.
4 Discontinue sales of this product
5 (Other) (SPECIFY) _____
D (Don't Know)
R (Refused)

ST38. What happens to [UTILITY]-discounted CFLs that remain unsold after a long period of time? (ALLOW MULTIPLE RESPONSES)
1 Does not happen, we sell all our discounted CFLs [SKIP TO TR1]
2 We keep it on the shelves until we sell them [SKIP TO TR1]
3 We distribute it to another one of our stores
4 We return it to the manufacturer
5 We sell it to another lighting distributor/contractor/liquidator.
6 We give it away
7 (Other) (SPECIFY)_____
D (Don't Know)
R (Refused)

ST39. Would this unsold inventory ever be sold out of the [UTILITY] service territory or out-of-state?

1 Yes
2 No [SKIP TO TR1]
D (Don't Know) [SKIP TO TR1]
R (Refused) [SKIP TO TR1]

ST40. How often do you estimate this happens?
(RECORD RESPONSE, INDICATE IF PER MONTH OR PER YEAR) _____
D (Don't Know)
R (Refused)

Section 3. Sales Trends

Next, I'd like to shift focus to lighting ***sales*** trends at your store.

[ASK SECTION IF ST1= 1]

For the next few questions, think about ***standard ENERGY STAR*** CFL bulbs that are 30 watts or less.

TR1. Would your store stock ***standard ENERGY STAR*** CFLs without the support of [UTILITY] Upstream Lighting Program?

1 Yes
2 No [SKIP TO TR3]
D (Don't Know)
R (Refused)

TR2. If the discounted ***standard ENERGY STAR*** CFL bulbs were not available, do you think your sales of these CFL bulbs would be about the same, lower, or higher?

1 (Same)
2 (Lower)
3 (Higher)
D (Don't Know) [SKIP TO TR6]
R (Refused) [SKIP TO TR6]

TR3. Why do you think this is?
(RECORD RESPONSE) _____ [If TR1 = 2 then Skip to TR6]

D (Don't Know) [SKIP TO TR6]

R (Refused) [SKIP TO TR6]

TR4. By what percentage do you estimate your store's sales of ***standard ENERGY STAR*** CFLs would be [TR2 higher/lower] during the 2006-2008 time period if the discounted CFLs were not available?

(RECORD PERCENTAGE) _____% (higher/lower)

D (Don't Know)

R (Refused)

TR5. I want to make sure I understand you correctly. When you say your store's sales would be [PERCENTAGE FROM QUESTION TR4] [TR2 higher/lower] without the discounted bulbs, you're saying that if you sold 100 CFLs in a given week with the discount bulbs, you would have only sold [If TR2 = "lower" then 100 - (PERCENTAGE FROM QUESTION TR4* 100); else if TR2 = "higher" then 100 + (PERCENTAGE FROM QUESTION TR4*100] that week without the discount bulbs. (IF RESPONSE IS ≠ YES THEN CLARIFY RESPONSE TO TR4).

[ASK NEXT SECTION (TR6 – TR10) IF ST1 = 2]

TR6. Now I'm going to ask you about the effect of the program discounts on your sales of ***specialty CFLs*** such as dimmable, 3-way, or reflector CFLs. Would your store stock ***specialty CFLs*** without the support of the [UTILITY] Upstream Lighting Program?

1 Yes

2 No [SKIP TO TR8]

D (Don't Know)

R (Refused)

TR7. If the discounted ***specialty*** CFLs were not available, do you think your sales of these CFL bulbs would be about the same, lower, or higher?

1 (Same)

2 (Lower)

3 (Higher)

D (Don't Know) [SKIP TO TR11]

R (Refused) [SKIP TO TR11]

TR8. Why do you think this is?

(RECORD RESPONSE) _____ [If TR6 = 2 then Skip to TR11]

D (Don't Know) [SKIP TO TR11]

R (Refused) [SKIP TO TR11]

TR9. By what percentage do you estimate your store's sales of these ***specialty*** CFLs would be [TR7 higher/lower] during the 2006-2008 time period if program discounted CFL bulb were not available?

(RECORD PERCENTAGE) _____% (higher/lower)

D (Don't Know)

R (Refused)

TR10. I want to make sure I understand you correctly. When you say your store's sales would be [PERCENTAGE FROM QUESTION TR9] lower without the [UTILITY] discounts. So you're saying that if you sold 100 CFLs in a given week with the discounts, you would have only sold [If TR7 = "lower" then 100 - (PERCENTAGE FROM QUESTION TR9* 100); else if TR7 = "higher" then 100 + (PERCENTAGE FROM QUESTION TR9 *100] that week without the [UTILITY] discounts. (IF RESPONSE IS ≠ YES THEN CLARIFY RESPONSE TO TR9).

[ASK NEXT SET OF QUESTIONS (TR11 – TR15) IF ST1 = 3]

TR11. Now I'm going to ask you about the effect of the [UTILITY] discounts on your sales of ***Energy Star qualified CFL fixtures***. Would your store stock ***Energy Star qualified CFL fixtures*** without the support of the [UTILITY] Upstream Lighting Program?

1 Yes

2 No [SKIP TO TR13]

D (Don't Know)

R (Refused)

TR12. If the discounted ***Energy Star CFL fixtures*** were not available, do you think your sales of these fixtures would be about the same, lower, or higher?

1 (Same)

2 (Lower)

3 (Higher)

D (Don't Know) [SKIP TO TR16]

R (Refused) [SKIP TO TR16]

TR13. Why do you think this is?

(RECORD RESPONSE) _____ [If TR11 = 2 then Skip to TR16]

D (Don't Know) [SKIP TO TR16]

R (Refused) [SKIP TO TR16]

TR14. By what percentage do you estimate your store's sales of these ***Energy Star qualified CFL fixtures*** would be [TR12 higher/lower] during the 2006-2008 time period if [UTILITY] discounts were not available?

(RECORD PERCENTAGE) _____% (higher/lower)

D (Don't Know)

R (Refused)

TR15. I want to make sure I understand you correctly. When you say your store's sales would be [PERCENTAGE FROM QUESTION TR14] [TR12 higher/lower] without the [UTILITY] discounts. So you're saying that if you sold 100 CFL fixture in a given week with the discounts, you would have only sold [If TR12 = "lower" then 100 - (PERCENTAGE FROM QUESTION TR14* 100); else if TR12 = "higher" then 100 + (PERCENTAGE FROM QUESTION TR14*100] that week without the discounts. (IF RESPONSE IS ≠ YES THEN CLARIFY RESPONSE TO TR14)

N

TR16. Do your light bulb sales have seasonal cycles or fluctuate during the year? If so, when? (PROBE: Seasonal—Spring, Summer, Fall, Winter; Events/promotions--Earth Day (Spring), Change a Light… (Fall), utility promotions, other) Please specify the sales changes for standard ENERGY STAR CFLs, specialty CFLs, and incandescent bulbs. For each type of bulb, please say the time of year when the changes occur, and whether the changes are increases or decreases.

Bulb type 1 Standard ENERGY STAR CFLs 2 Specialty CFLs 3 ENERGY STAR qualified light fixtures 4 In candescent bulbs	**When do sales change?**	**Percent Change?**	**Increase or decrease?**
			Increase/ Decrease
			Increase/ Decrease
			Increase/ Decrease
			Increase/ Decrease

N

TR17. In the last year, what effect have each of the following had on your sales of ENERGY STAR light bulbs? If the effect was positive or negative, approximately what was the % change in your sales?

	TR14 Effect *1 Positive* *2 Negative* *3 No Effect* *D Don't Know* *R Refused*	**TR14 Percent Change**
a. The economy	TR14a	TR14a.1_____ *%*
b. Higher energy prices	TR14b	TR14b.1_____ *%*
c. New federal standards to improve the energy efficiency of light bulbs	TR14c	TR14c.1_____ *%*
d. State standards for lighting	TR14d	TR14d.1_____ *%*
e. State level Promotional Activities	TR14e	TR14e.1_____ *%*
f. Environmental concerns	TR14f	TR14f.1_____ *%*
g. New or improved energy efficient lighting technologies	TR14g	TR14g.1_____ *%*
h. The sales of competing retailers	TR14h	TR14h.1_____ *%*
i. The [UTILITY] Upstream Lighting Program	TR14i	TR14i.1_____ *%*

NON PARTICIPANTS SKIP TO TR21

[ASK IF ST1 = 1,2,3]

TR18. Did you have an expectation that CFL sales would increase through your participation in the [UTILITY] program?

1 Yes

2 No [SKIP TO TR21]

D (Don't Know) [SKIP TO TR21]

R (Refused) [SKIP TO TR21]

TR19. Has your expectation of increased sales through the program been met?

1 Yes

2 No

D (Don't Know) [SKIP TO TR21]

R (Refused) [SKIP TO TR21]

TR20. Why do you say that?

_____ (OPEN-END)

N

TR21. Can you estimate the percentage of customers who are buying CFLs for their own homes, the percentage who are buying CFLs for their own businesses, and the percentage who are builders or contractors buying them for construction or retrofit projects?

1 Yes

2 No [SKIP TO TR22]

D (Don't Know) [SKIP TO TR22]

R (Refused) [SKIP TO TR22]

N

TR21a. What's your percent estimate of this breakdown? (IF NEED PROMPT: IS IT ABOUT 50% CONTRACTORS, 50% HOMEOWNERS, ETC.)

1. _____% of customers buying CFLs for their own homes

2. _____% of customers buying CFLs for their own businesses

3. _____% of customers buying CFLs for construction/retrofit projects

D (Don't Know) [SKIP TO TR22]

R (Refused) [SKIP TO TR22]

N

TR21b. What information is this based on? (IF NEED PROMPTION: SIZE OF PURCHASE, INTERACTION WITH CUSTOMERS, ETC.)

(RECORD RESPONSE) _____

N TR22. Considering data you might have available or your personal knowledge, what would you estimate the total ***sales*** of all CFLs to be for your store over the course of a month or a year?

Time Period	$ per Time Period	Units per Time Period
Average month	TR18.m.1	TR18.m.2
OR		
Year	TR18.n.1	TR18.n.2

D Don't Know [SKIP TO TR25]

R Refused [SKIP TO TR25]

N TR23. How would that total be broken down between screw-based CFLs and pin-based CFLs?

Pin-based CFLs	$ or %
Screw-based CFLs	$ or %

N TR24. What is the source of your estimate?

_____ (OPEN-END) (PROBE: INTERACTION WITH CUSTOMERS, SALES DATA, ECT)

[ASK IF ST1 = 1,2,3]

TR25. What percent of your total CFL sales would you estimate are CFLs purchased through the [UTILITY] Upstream Lighting Program?

_____%

D Don't Know

R Refused

N TR26. What would you estimate is the total ***sales*** of incandescent bulbs for your store over the course of a month or a year?

_____ ($ per month) and/or _____ (units per month)

_____ ($ per year) and/or _____ (units per year)

D Don't Know

R Refused

N TR27. What is the source of your estimate?
_____ (OPEN-END) (PROBE: INTERACTION WITH CUSTOMERS, SALES DATA, ECT)

Section 5: CFL Pricing

N PR1. Now I would like to ask you a few questions about your CFL pricing. Some retailers use something called "keystone pricing" where the retail price is set at twice the wholesale price. Is this how you determine the retail price for the [IF ST1 = 1,2,3 then insert "discounted"] CFLs you sell?

1 Yes	[SKIP TO PR3]
2 No	
D (Don't Know)	[SKIP TO PR3]
R (Refused)	[SKIP TO PR3]

N PR2. How do you determine the retail price for the [IF ST1 = 1,2,3 then insert "[UTILITY]-discounted"] CFLs you sell?
(RECORD RESPONSE)_____
D (Don't Know)
R (Refused)

NON PARTICIPANTS SKIP TO PO1

PR3. Some manufacturers participating in the Upstream Lighting Program have offered their products to certain retailers for free. Have you ever received [UTILITY]- discounted CFLs for free?

1 Yes	
2 No	[SKIP TO PR5]
D (Don't Know)	[SKIP TO PR5]
R (Refused)	[SKIP TO PR5]

PR4. How do you determine the retail price for these "free" CFLs?
(RECORD RESPONSE) _____
D (Don't Know)
R (Refused)

PR5. [ASK IF ST2 = 1] You said earlier that you sell standard ENERGY STAR CFLs that do not receive discounts from the [UTILITY] Program. Are the discounted CFLs typically lower-priced than other, non-[UTILITY] discounted CFLs?

1 Yes
2 No [SKIP TO PO1]
D (Don't Know) [SKIP TO PO1]
R (Refused) [SKIP TO PO1]

PR6. On a per-bulb basis, on average how much lower are the [UTILITY]-discounted CFLs than the other CFLs that you sell?
(RECORD ESTIMATE IN $/BULB)_____

PR7. Have the reduced prices of discounted bulbs impacted the sale of other compact fluorescent bulbs in your store?

1 Yes
2 No [SKIP TO PO1]
D (Don't Know) [SKIP TO PO1]
R (Refused) [SKIP TO PO1]

PR8. How has it impacted the sale of other CFLs?
_____ (OPEN-END; PROBE: SALES INCREASED/DECREASED, STOCK MORE/FEWER MODELS, OTHER CFL PRICES INCREASED/DECREASED, OTHER)

Section 6: Point-Of-Purchase (POP) Promotions

N

PO1. Now I would like to ask you a few questions about how you promote the CFLs in your store. Does your store partake in any independent marketing or promoting of ENERGY STAR light bulbs [IF ST1 =1,2,3 then insert "without [UTILITY] Upstream Lighting Program involvement"]?

1 Yes
2 No [SKIP TO PO4]
D (Don't Know) [SKIP TO PO4]
R (Refused) [SKIP TO PO4]

N

PO2. What independent marketing or promoting do you do?
_____ (OPEN-END) [PROBE: Do you put in more prominent locations, add more signage…]

N PO3. How often do you do this? Would you say it was always, very often, sometimes, or not very often?

1 (Always)

2 (Very Often)

3 (Sometimes)

4 (Not Very Often)

D (Don't Know)

R (Refused)

N PO4. When your store and/or the sponsors are promoting ENERGY STAR lighting, do your sales of these products…?

1 Increase

2 Stay the Same

3 Decrease

D (Don't Know)

R (Refused)

N PO5. If increase or decrease, by how much – as a percentage of sales? (PROBE FOR A PERCENT ESTIMATE)

(RECORD PERCENTAGE) _____%

D (Don't Know)

R (Refused)

Section 7: Firmagraphics

Finally, I have a few questions about your store characteristics.

N F1. Would you consider this store independently-owned, a franchise, or part of a corporation?

1 Independently-owned
2 Franchise
3 Corporate Owned
4 Other (SPECIFY)_____

N F2. What is the square footage (of the store's sales area)? Your best estimate is fine.

(RECORD RESPONSE) _____

N F3. How many employees work at this particular store location?

(RECORD RESPONSE) _____

N F4. Which category would you place your store? Is it a … (READ RESPONSES)
1 Mass Merchandiser (such as Target or Walmart)
2 Discount Store (such as Big Lots or a 99¢ store)
3 Large Home Improvement (such as Home Depot or Lowe's)
4 Hardware (such as ACE Hardware)
5 Grocery (such as Vons or Ralphs)
6 Drug Store (such as Rite Aid or Longs)
7 Other (SPECIFY)_____

N F5. What is your name and job title? (RECORD) _____

F6. [IF ST1 =1,2,3] How many years has your store been selling CFLs?

1

2

3

4

5

More than five

D (Don't Know)

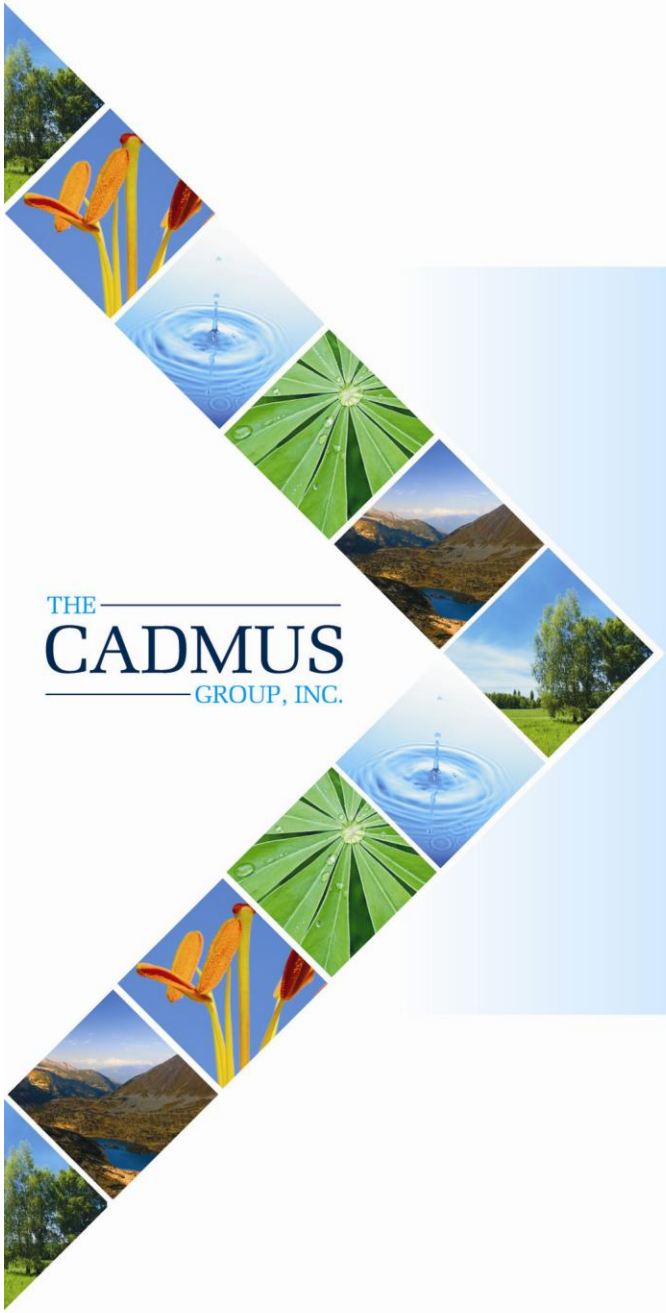
R (Refused)

[THANK AND TERMINATE]

Please note if respondent would like a copy of the study results.

Appendix I

Store-Level Retailer Survey Findings



THE CADMUS GROUP, INC.

CFL Market Effects Upstream Market Actor Interviews: Preliminary Results

September 23, 2009

NMR Nexus Market Research, Inc.

KEMA

Objectives

Present a range of perspectives:

- Update participant upstream market actor interviews conducted in 2008 (manufacturers and corporate-level retailers)
- Include nonparticipant market actor perspective (manufacturers and corporate-level retailers)
- Include store-level retailer perspective

Five Upstream Market Actor Survey Instruments

Actor Type	Geographic Location	Participant? (Yes/No)	Respondent's Organizational Level	Survey Instrument Used	Number of Respondents
Manufacturer	NA	Yes	Corporate	1	16
		No	Corporate	2	2
Retailer	CA	Yes	Corporate	3	16
			Store	5	242
		No	Corporate	4	1
	Comparison Area	No	Store	5	45
			Corporate	4	3
			Store	5	297

Key to Survey/Interview Guides:

1. Program Attribution, Market Effects, and Market Characterization Interview Guide for Lighting Manufacturers Participating in the 2006-2008 California Upstream Lighting Programs (fielded 2008; updates in 2009)
2. Market Effects and Market Characterization Interview Guide for Nonparticipant Lighting Manufacturers (fielded Summer 2009)
3. Program Attribution, Market Effects, and Market Characterization Interview Guide for Executives of Large Lighting Retailers Participating in the 2006-2008 California Upstream Lighting Programs (fielded 2008; updates in 2009)
4. Market Effects, and Market Characterization Interview Guide for Nonparticipant Executives of Large Lighting Retailers (fielded Summer 2009)
5. 2006-08 ULP Store/Lighting Manager Survey (fielded Spring-Summer 2009)

Manufacturer Sample

- Participants
  - Conducted interviews with 18 participant manufacturers
  - Accounted for 94% of 2006-08 ULP sales
- Nonparticipants
  - Sample development began with roughly 90 manufacturers from Comprehensive Shelf Stocking Survey, examination of ENERGY STAR partners, and other web-based research
  - 13 manufacturers remained after filtering out subsidiaries/brands produced by larger manufacturers and out-of-business companies
  - 2 completed interviews (1 large, 1 small)

Corporate-Level Retailer Sample

- Participants
  - Conducted interviews with 19 participant retailers
  - Accounted for 75% of 2006-08 ULP program sales
  - Represented all major retail channels
- Nonparticipants
  - Sample based on D&B data for major retail channels in CA, GA, KS, and PA
  - Filtered to remove retailers with fewer than 3 stores; non-CFL retailers
  - 4 completed interviews

Store-Level Retailer Sample

- Priority: stores with completed shelf surveys
- California Participants
  - Drawn from IOU program databases
  - Geographical stratification based on 2006-08 CFL shipments by IOU service area
  - Store size (large chain, small chain, independent) and retail channel stratification based on 2006-08 ULP program activity
- California Nonparticipants
  - Shelf survey sample supplemented with data purchased from SSI for all major CFL retail channels
  - Geographical stratification based on 2006-08 CFL shipments by IOU service area
  - Store size stratification based on 2006-08 ULP program activity
  - Retail channel stratification same as that used for Comprehensive Shelf Stocking Survey

Store-Level Retailer Sample

- Comparison Area Nonparticipants
  - Shelf survey sample supplemented with data purchased from SSI for all major CFL retail channels
  - Targeted equal number (100) of respondents in each of the 3 states
  - Retail channel stratification same as that used for Comprehensive Shelf Stocking Survey

Store-Level Retailer Sample

	Mass Merch	Discount	Home Improv	Hardware	Grocery	Drug	Total
CA Participant	28	27	27	43	107	10	242
CA Nonparticipant	19	5	9	3	3	6	45
Comp Area	98	51	74	31	42	1	297
Total	145	83	110	77	152	17	584

Survey Instruments

Topics include:

- Program participation characteristics, motivation
- Sales data request, program sales confirmation
- Recent program trends and policies
- Free-ridership
- Spillover; other market effects
- Supply chain characterization
- Stocking practices, sell-through
- Program leakage
- Pricing practices
- Market characterization
- Product quality, recycling
- Program satisfaction

ULP's Effect on Market Entry—Manufacturers

Participants

- Roughly 1/3 sold CFLs at retail prior to joining ULP
- Most new entrants unable to contract with established CFL retailers, so sell almost exclusively through discount/ethnic grocery and 99¢ stores
- Some established brand-name companies felt pressure to join after they lost key accounts to new entrants

Nonparticipants

- Market entry can be difficult:
  - Sales volume must meet program requirements
  - Sales volume must be sufficient to compensate for add'l expenses (testing; packaging)
  - Excessive paperwork
- "Many of these programs end up 'pay to play' programs for us, as we just do not move enough product…" (small nonparticipant)

ULP's Effect on Market Entry—Corporate-Level Retailers

Participants

- Over ¼ (mostly discount and grocery stores) had not sold CFLs prior to joining program
- New manufacturer participants made joining possible

Nonparticipants

- All began selling ES CFLs in 2007
  - Desire to remain competitive
  - Response to customer demand
  - Directive from parent company
  - Approached by CFL vendor

ULP's Effect on CFL Production Costs, Volumes, and Efficiencies—Manufacturers

Participants

- Most (75%) saw cost reductions in over past 10 years*
  - New entrants with little presence outside of CA credited CA programs due to their increased sales volumes
  - Larger companies with significant presence outside CA gave CA programs less credit
    - Programs not available year-round
    - Cost decreases also attributable to programs outside of CA
- 81% think CA programs important in driving technological improvements:
  - Programs insist on ever-higher standards
  - Programs' increased sales volumes and revenue streams allow for R&D investment
- Lowest ratings from two of the "Big 3" manufacturers

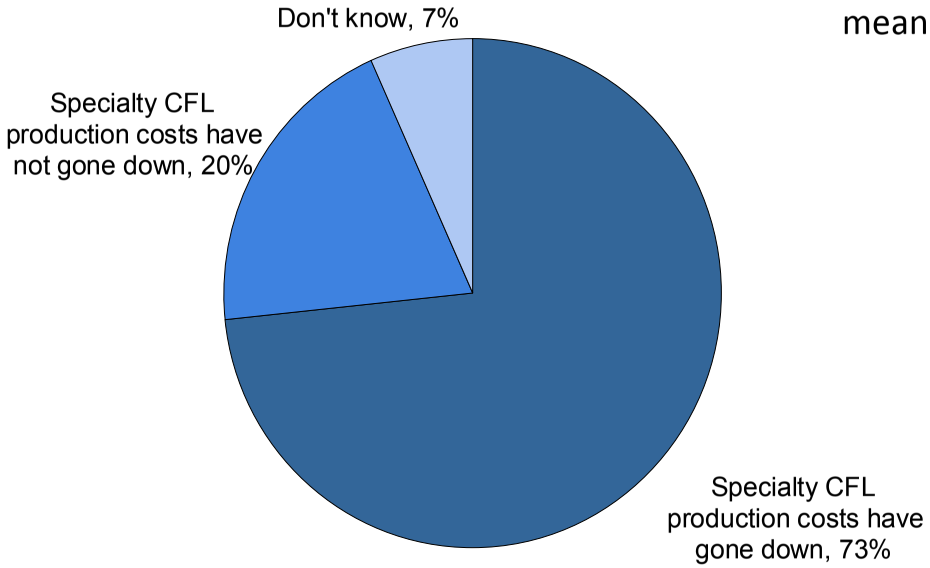
* Remainder were new to program.

Nonparticipants

- Cost reductions not linked to utility or government programs
- Reductions are due to technological and factory line improvements, process efficiency improvements, and increased number of manufacturers (competition)
- "I don't see the connection [between recent CFL production cost reductions and utility programs], it seems like a stretch." (Large nonparticipant manufacturer)

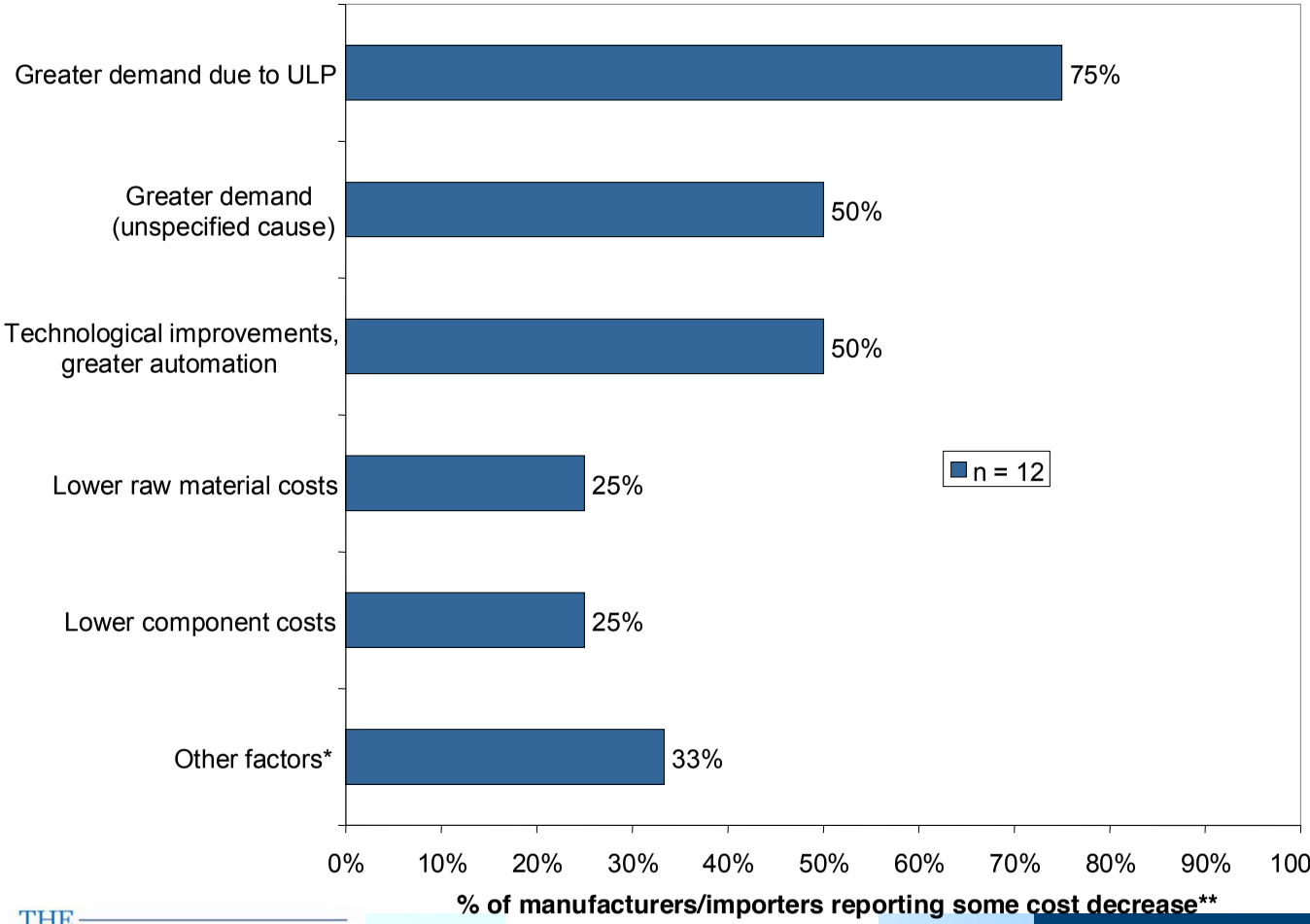
2009 Participant Manufacturer Survey: Specialty CFL Production Cost 5-Year Trend

n = 15



Estimates of the declines in specialty production costs ranged from 3-45% with a mean estimate of 18%.

2009 Participant Manufacturer Survey: Reasons for Recent Decline in Specialty CFL Production Costs



Other factors:

- Benefitted from increases in standard CFL factory production scale
- Increased competition among manufacturers
- Cutting margins to boost sales during current economic downturn
- Internal retail experts urged factory managers to reduce production costs to reduce specialty CFL price point

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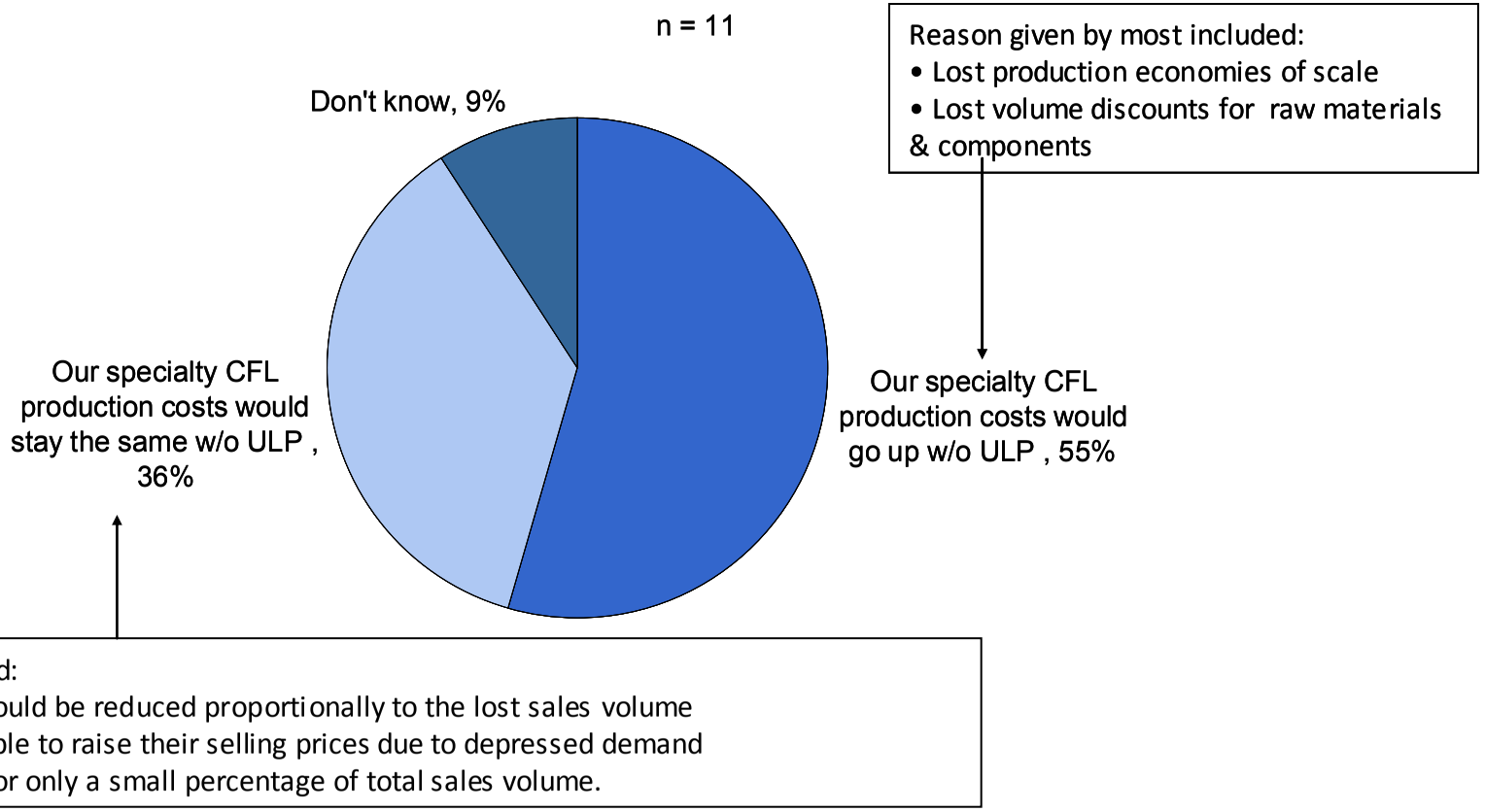
2009 Participant Manufacturer Survey: What Would Happen to Specialty CFL Production Costs in the Absence of the ULP?



ULP's Effect on Barriers to CFL Purchase—Manufacturers

Participants

- By bringing CFLs to new retail channels, new manufacturers introduced CFLs to customers who had previously found them too expensive
- Lowered price point and thereby encouraged customers in all channels to try newer CFL products
- ULP helped promote specialty CFLs through larger incentives

Nonparticipants

- Utility and government programs improve consumers' awareness and improve perceptions about product quality
- CA programs play a leadership role in this

ULP's Effect on Barriers to CFL Purchase—Corporate-Level Retailers

Participants

- Introduced CFLs to new retail channels thereby providing some customers exposure to CFLs for the first time
- Lowered price point and thereby encouraged customers in all channels to try newer CFL products

Nonparticipants

- ULP had no effect on sales outside of CA

ULP's Effect on CFL Pricing—Manufacturers

Participants

- New entrants, willing to sell CFLs at lower markups than established manufacturers, increased price competition

Nonparticipants

- To stay competitive, programs force manufacturers to lower CFL prices (thereby lowering profitability)

ULP's Effect on CFL Markets in Other States

Participant Manuf & Corp-Level Retailers

- Majority (81% of manuf; 65% of retailers) believe CA influenced other states
- CA programs:
  - Served as models
  - Increased production capacity
  - Increased general awareness
  - Encouraged broader distribution of better CFL products

Nonparticipant Corp-Level Retailers

- ULP has no effect on sales outside of CA
- "…I think people want rebates in their areas…they react to the price in their hometown. I don't think they're looking at what California is doing."
- Note: no participants send or sell program-discounted CFLs outside of CA

CFL Market Drivers

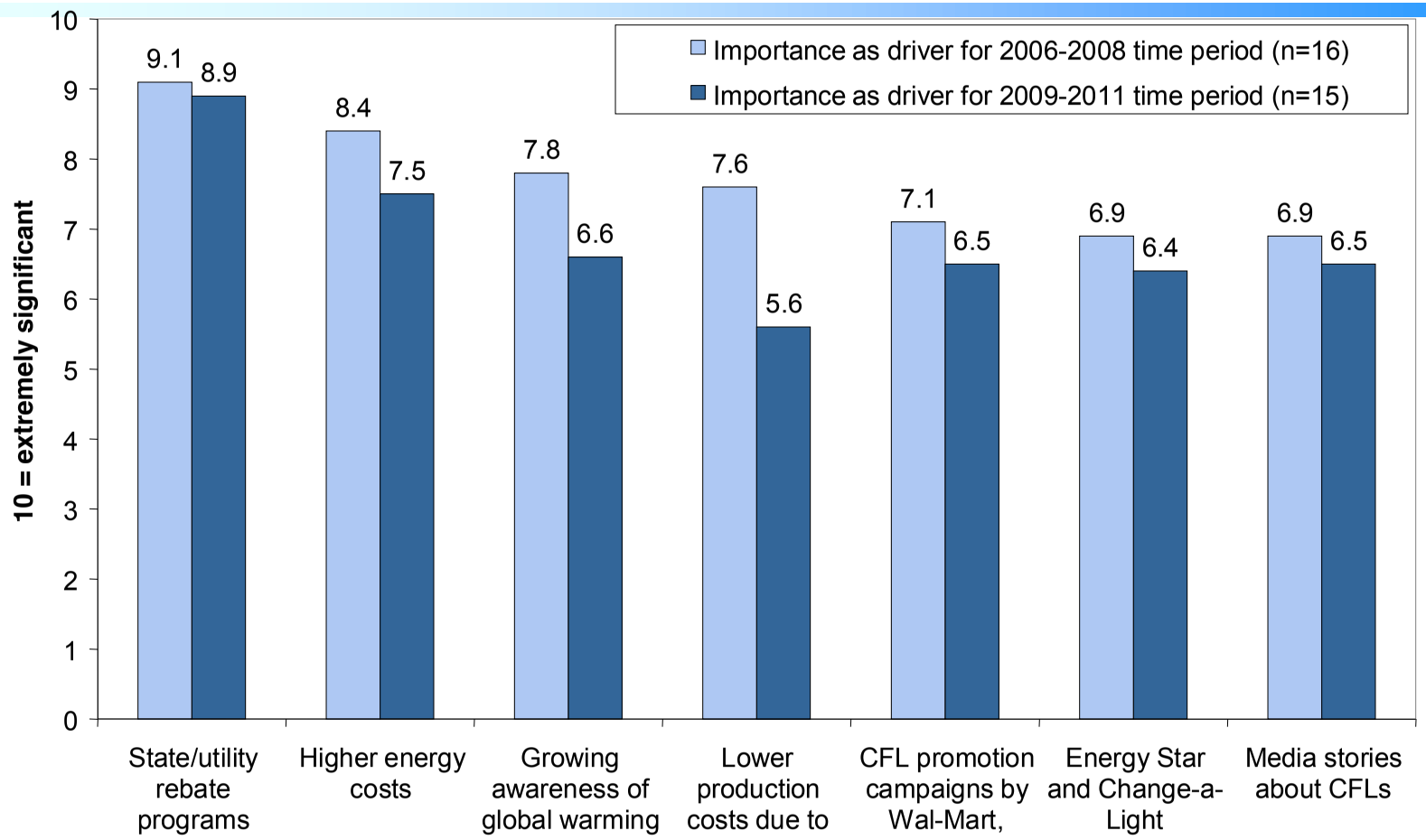
Participant Manuf/ Corp-Level Retailer Ratings

1. Rebate programs
2. Higher energy costs
3. Global warming
4. Lower production costs
5. Retailer-specific promotions

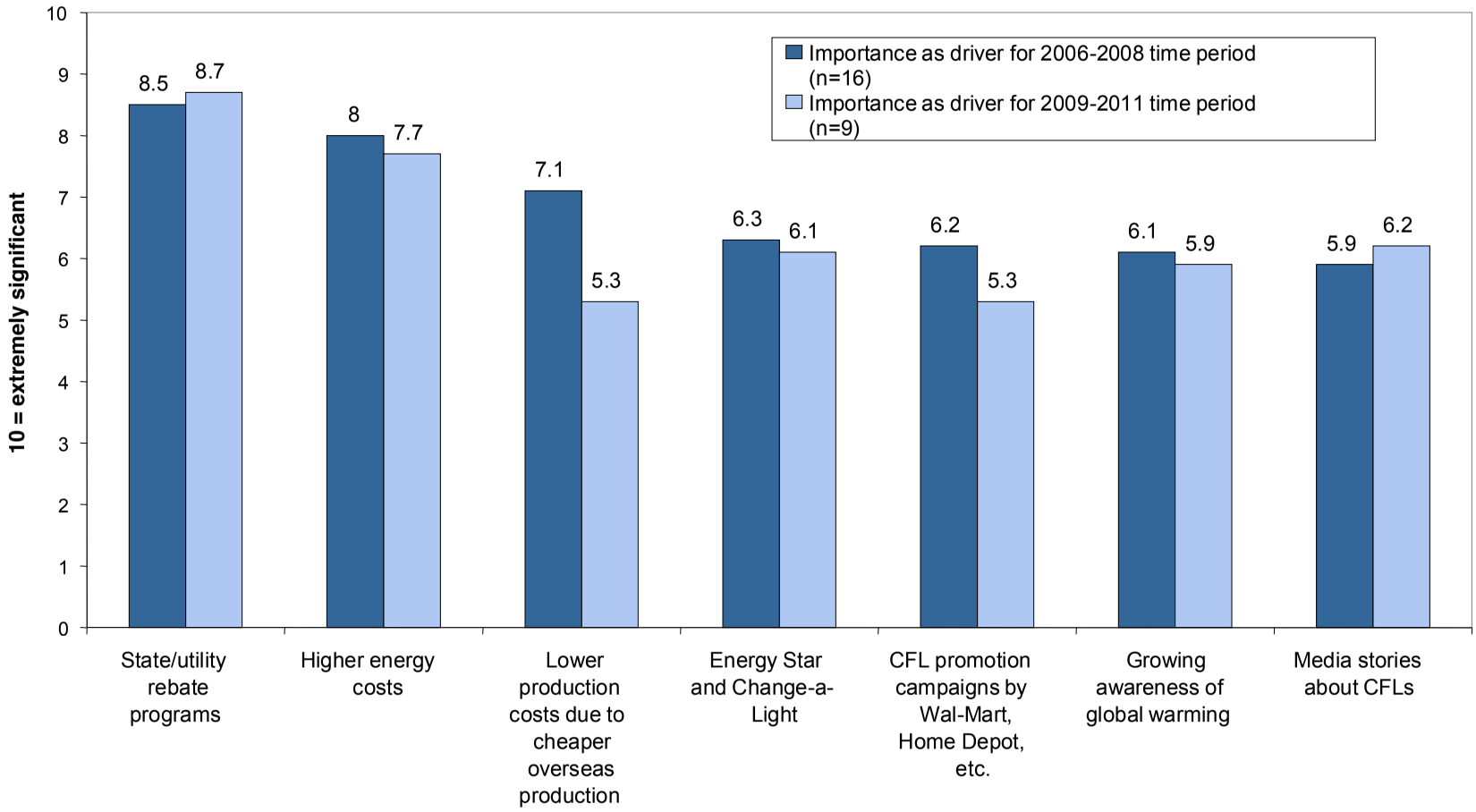
Nonparticipant Corp-Level Retailers

1. Higher energy costs
2. Media stories
3. Global warming

CFL Market Drivers—Participant Manufacturers



CFL Market Drivers—Corporate-Level Participant Retailers



CFL Market Drivers—Explanations for Observed Changes

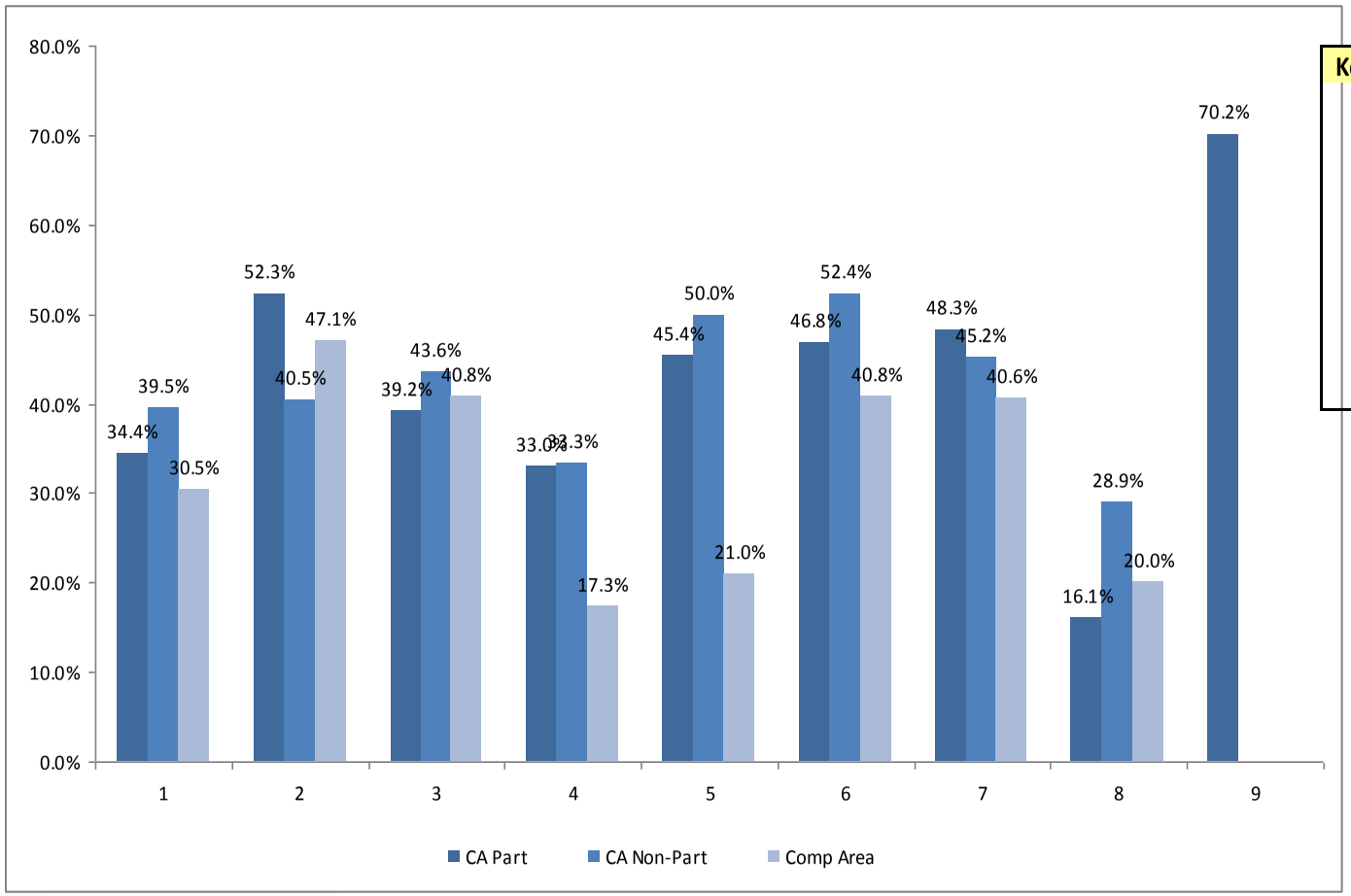
- Production efficiencies – manufacturer importance rating dropped from 7.6 to 5.6; retailer rating dropped from 7.1 to 5.3
  - Belief that production costs can't get much lower w/o sacrificing quality.
  - Weak economy can't sustain further increases in capacity.
  - Tougher standards – ENERGY STAR, RoHs
  - Chinese labor costs are increasing
  - Currency exchange issues – weaker $

- Independent promotional campaigns by Wal-Mart, Home Depot, etc. – 2nd largest rating drop according to high-level buyers
  - Wal-Mart is no longer promoting CFLs as much: realized they are no longer hot items
  - Many of these campaigns are timed with rebate programs. When rebates are unavailable, everyday CFL prices at these stores are too high.

Which Specialty CFL Production Cost Reduction Drivers Are Sustainable Absent the ULP?

Factor	Continue in Absence of ULP?
Recent economic downturn Reductions in CFL raw material & component costs Manufacturers cutting margins to help boost sales	Independent of ULP, so depends on the economic situation.
"Normal" competition encourages manufacturers to cut margins, spurring technological innovations that also cut production costs.	From 2008 and 2009 surveys, some manufacturers would drop out of CA market without program: less competition overall; significantly less in small grocery and discount stores. Manufacturers don't know how much lower production costs can go, especially w/ new ES, ROhs standards.
Rebate program-driven demand for specialty CFLs leads to production economies of scale, volume discounts on materials/components, and techical innovation.	Non-CA rebate programs would continue, but spillover benefit to CA would likely be minimal.
Growing consumer awareness/familiarity with specialty CFLs, separate from CFL programs (FYP, ENERGY STAR, IOU marketing, Wal-Mart buzz, general media)	Many campaigns timed to coincide with CFL rebates:may be less conducted as frequently in absence of rebates. Wal-Mart effect weaker than it was in 2008

ULP and Other Market Drivers—Store-Level Retailers



Key for Market Drivers

1. Economy
2. Higher energy prices
3. New federal standards
4. State lighting standards
5. State-level promotions
6. Environmental concerns
7. New/improved lighting techs
8. Sales of competing retailers
9. Utility's ULP

ULP's Effect on CFL Product Offerings—Manufacturers

Participants

- Encouraged production to shift to:
  - Higher efficiency CFLs (due to lumen level per wattage requirements)
  - CFLs with longer hours of life
  - Higher wattage CFLs
  - More specialty CFLs (for some)
- 2/3 said product quality improvements would have happened later without the ULP; 1/3 said at the same time

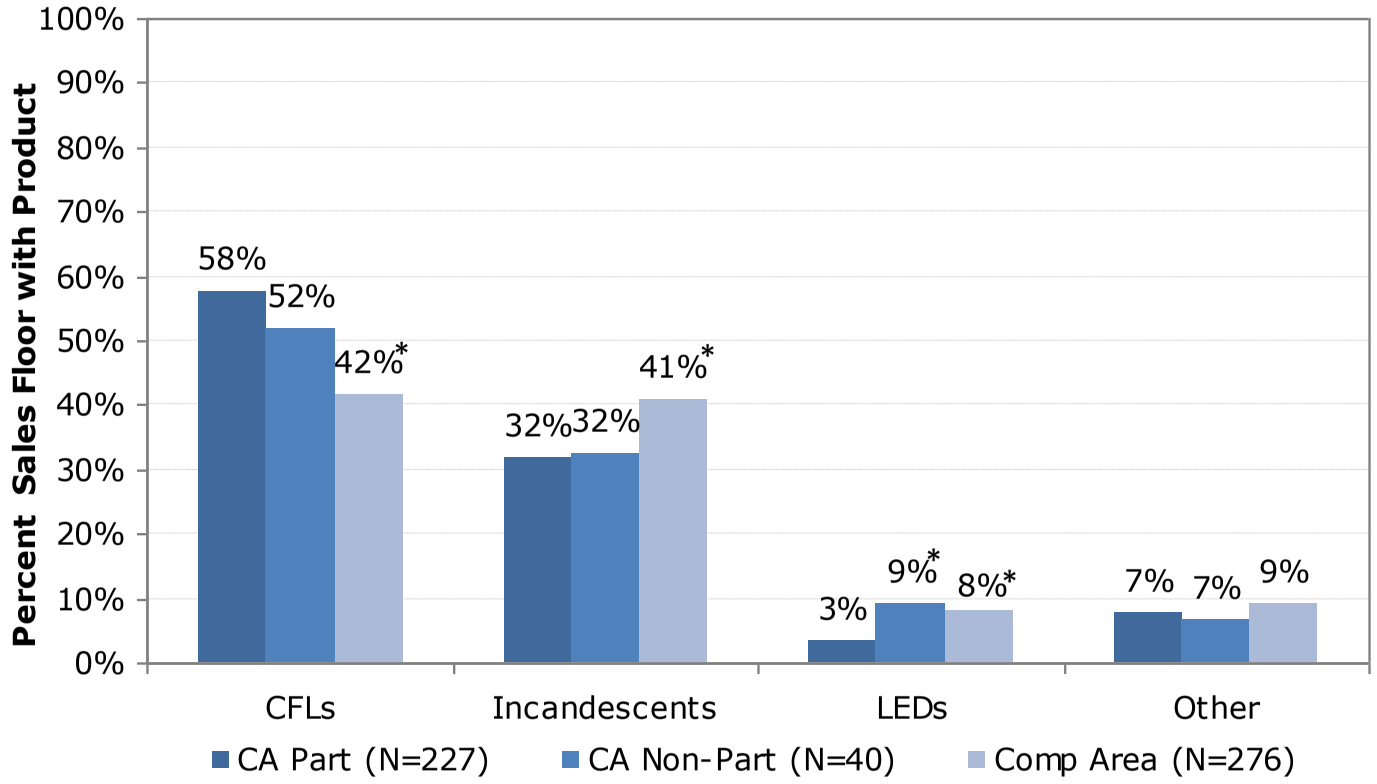
Nonparticipants

- Products already exceed program/ENERGY STAR standards
- Quality improvements would have happened at the same time without utility or government programs; improvements not linked to programs
- Quality improvements result from desire to remain competitive
- CFL programs lead to production and sale of low-quality products

ULP's Effect on CFL Product Offerings—Corporate-Level Participant Retailers

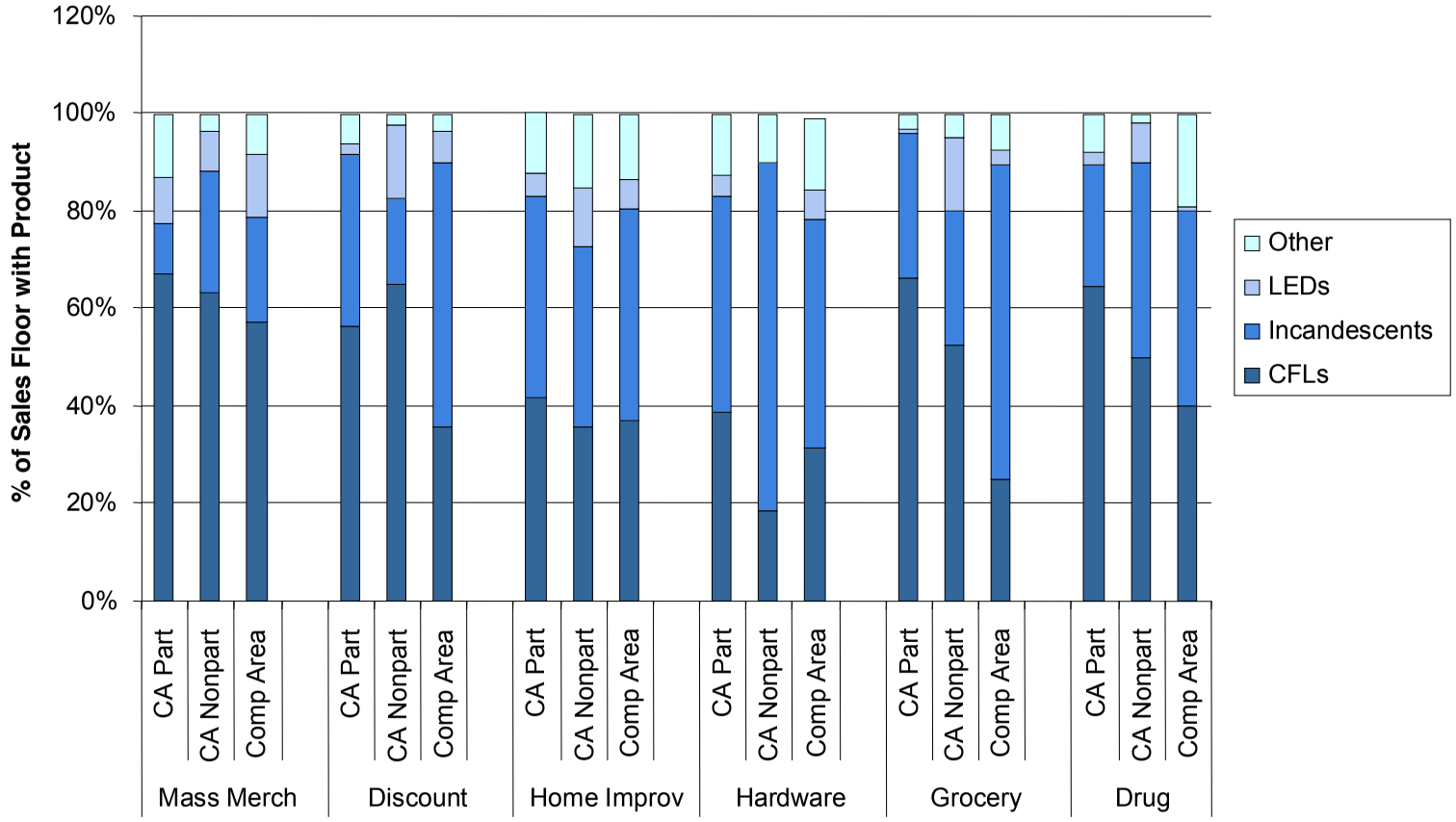
- Majority across channels (73%) said they would have stocked CFLs in the absence of the program
- Mass merchandise, home improvement, and hardware
  - Majority carried ENERGY STAR CFLs prior to program
  - program had little or no influence on CFL stocking and packaging
- Discount, grocery, and drug
  - Majority did *not* carry ENERGY STAR CFLs prior to program
  - Program encouraged shift to:
    - Selling more multi-packs
    - Increasing year-round shelf space for CFLs
    - Giving CFLs more prominent shelf space

Store-Level Retailers: Sales Floor Breakdown of Lighting Products

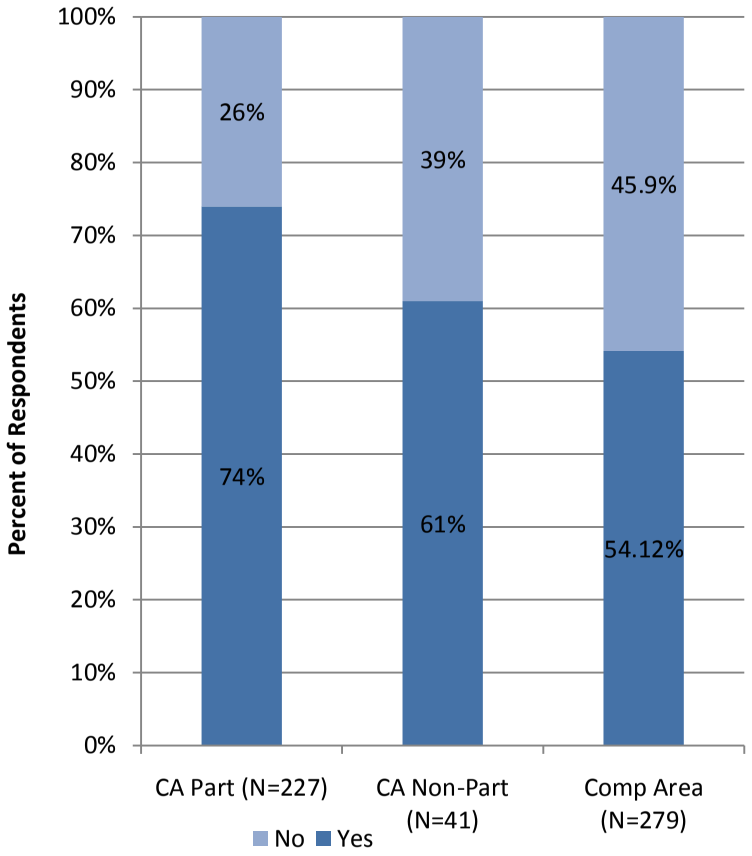


* Results between California participants and indicated respondent group are significantly different at the 95% confidence level.

Store-Level Retailers: Sales Floor Breakdown of Lighting Products by Retail Channel



Store-Level Retailers: Same Stocking Pattern as Last Year?



Respondents who observed a change in stocking pattern:

- 44% of CA participants said there has been an increase in the number or variety of CFLs; 4% said there has been a decrease
- 91% of CA nonparticipants and 83% of Comp Area nonparticipants said there has been an increase the number and/or variety of CFLs

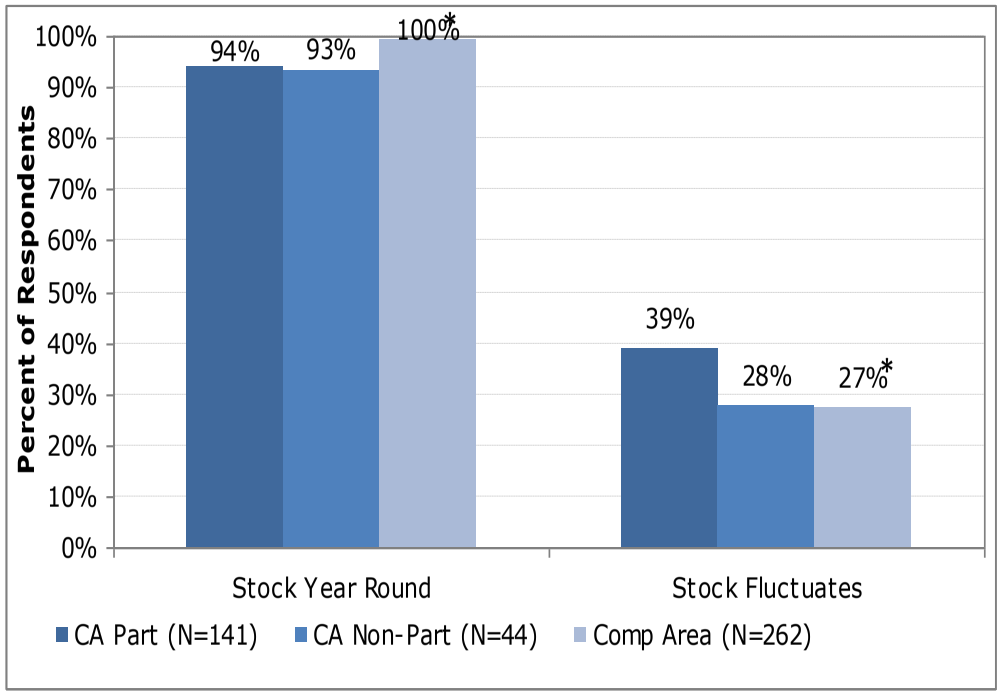
- 4% of CA participants said there has been an increase in LEDs
- 5% (1 of 21) CA nonparticipant and 15% of Comp Area nonparticipants said there has been an increase in LEDs

Store-Level Retailers: Same Stocking Pattern as Last Year?

- "CFLs are the going thing. We stock more CFLs. That is what people are buying now." (Georgia respondent)

- "There's a whole lot more CFLs coming in. We are changing the lighting department." (Pennsylvania respondent)

Store-Level Retailers: Standard ENERGY STAR CFL Stocking

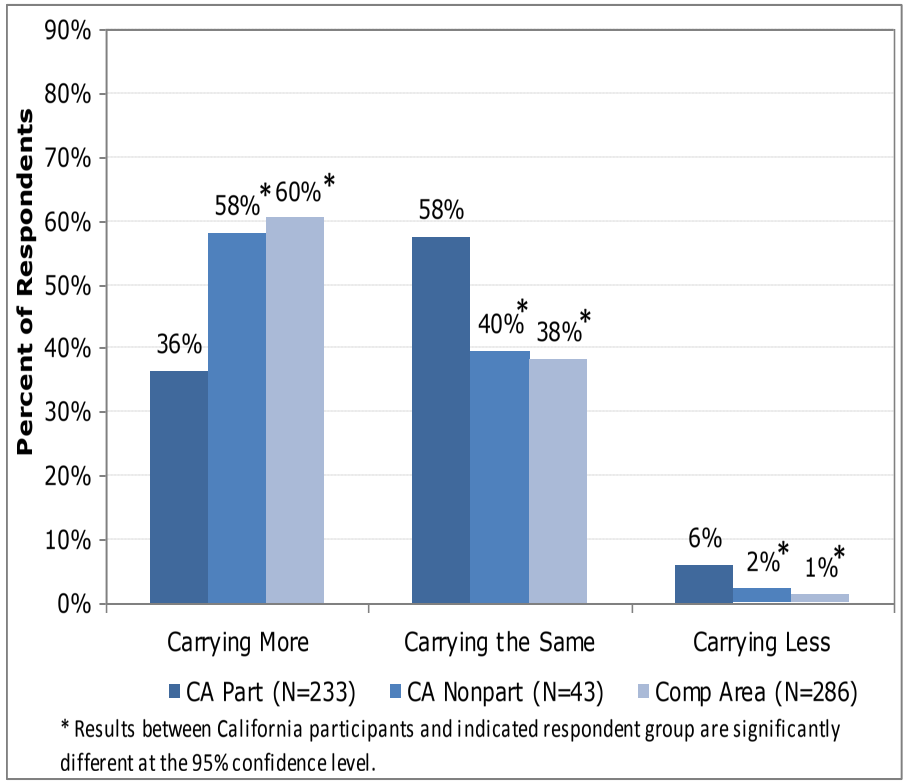


* Results between California participants and indicated respondent group are significantly different at the 95% confidence level

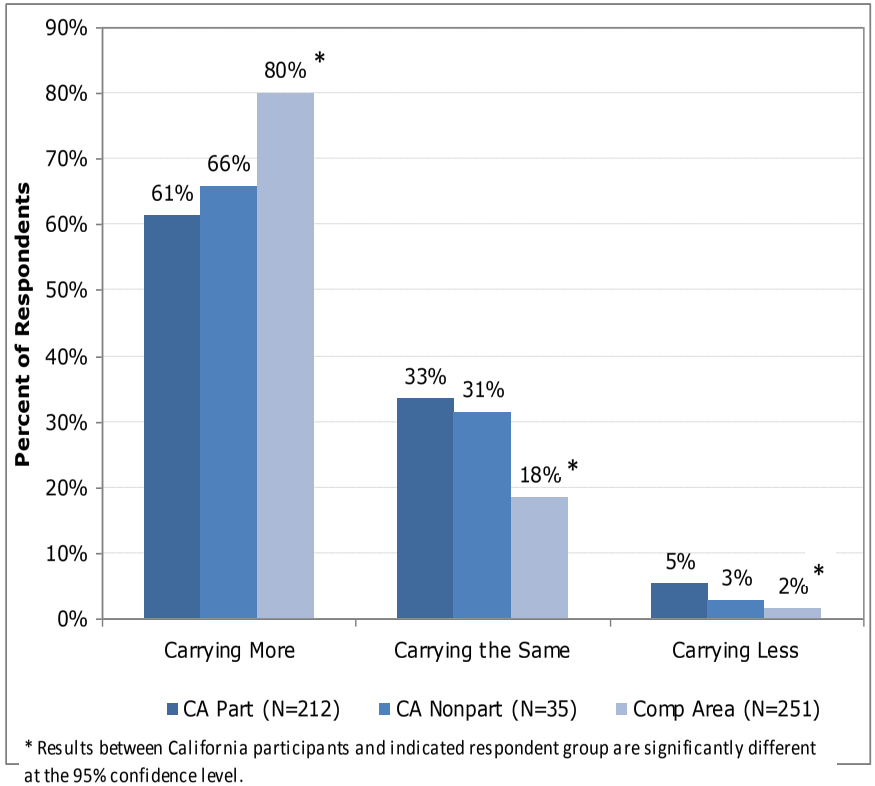
- Most retailers stock standard ENERGY STAR CFLs year round
- Fluctuations vary by retail channel

Store-Level Retailers: Changes Over Time in Number of ENERGY STAR CFL Models Carried

In the past year



In the past 3 years



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The remainder of Appendix I consists of the detailed (question-by-question) SAS output from the Store-Level Retailer Survey analysis.

St1a: Which of the following lighting types has your store stocked that are discounted by [UTILITY]: Standard ENERGY STAR CFLs that are 30 watts or less?

The FREQ Procedure

Table of st1a by atype				
st1a(Utility-discounted CFLs stocked: Standard ENERGY STAR CFLs, 30W or less)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Yes	218 37.33 100.00 90.08	0 0.00 0.00 0.00	0 0.00 0.00 0.00	218 37.33
No	10 1.71 100.00 4.13	0 0.00 0.00 0.00	0 0.00 0.00 0.00	10 1.71
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST1B: Which of the following lighting types has your store stocked that are discounted by [UTILITY]: Specialty CFLs?

The FREQ Procedure

Table of st1b by atype				
st1b(Utility-discounted CFLs stocked: Specialty CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	6 1.03 100.00 2.48	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 1.03
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Yes	61 10.45 100.00 25.21	0 0.00 0.00 0.00	0 0.00 0.00 0.00	61 10.45
No	164 28.08 100.00 67.77	0 0.00 0.00 0.00	0 0.00 0.00 0.00	164 28.08
Total	242 41.44	45 7.71	297 50.86	584 100.00

St1d: Which of the following lighting types has your store stocked that are discounted by [UTILITY]: Any other types of lighting?

The FREQ Procedure

Table of st1d by atype				
st1d(Utility-discounted CFLs stocked: other)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	4 0.68 100.00 1.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.68
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Yes	41 7.02 100.00 16.94	0 0.00 0.00 0.00	0 0.00 0.00 0.00	41 7.02
No	186 31.85 100.00 76.86	0 0.00 0.00 0.00	0 0.00 0.00 0.00	186 31.85
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST2a: Which of the following CFL lighting types does your store stock that are NOT discounted through any [UTILITY] energy efficiency program: Standard ENERGY STAR compact fluorescent bulbs that are 30 watts or less?

The FREQ Procedure

Table of st2a by atype				
st2a(Non utility-discounted CFLs stocked: Standard ENERGY STAR CFLs, 30W or less)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	3 0.51 37.50 1.24	0 0.00 0.00 0.00	5 0.86 62.50 1.68	8 1.37
Refused	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Yes	141 24.14 31.33 58.26	44 7.53 9.78 97.78	265 45.38 58.89 89.23	450 77.05
No	97 16.61 77.60 40.08	1 0.17 0.80 2.22	27 4.62 21.60 9.09	125 21.40
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST2b: Which of the following CFL lighting types does your store stock that are NOT discounted through any [UTILITY] energy efficiency program: Specialty CFLs?

The FREQ Procedure

Table of st2b by atype				
st2b(Non utility-discounted CFLs stocked: Specialty CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	1 0.17 8.33 0.41	2 0.34 16.67 4.44	9 1.54 75.00 3.03	12 2.05
Yes	85 14.55 25.60 35.12	30 5.14 9.04 66.67	217 37.16 65.36 73.06	332 56.85
No	156 26.71 65.00 64.46	13 2.23 5.42 28.89	71 12.16 29.58 23.91	240 41.10
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST2d: Which of the following CFL lighting types does your store stock that are NOT discounted through any [UTILITY] energy efficiency program: Any other types of lighting?

The FREQ Procedure

Table of st2d by atype				
st2d(Non utility-discounted CFLs stocked: other)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	3 0.51 33.33 1.24	1 0.17 11.11 2.22	5 0.86 55.56 1.68	9 1.54
Yes	45 7.71 28.85 18.60	11 1.88 7.05 24.44	100 17.12 64.10 33.67	156 26.71
No	194 33.22 46.30 80.17	33 5.65 7.88 73.33	192 32.88 45.82 64.65	419 71.75
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST2e: Which of the following CFL lighting types does your store stock that are NOT discounted through any [UTILITY] energy efficiency program: Dont know

The FREQ Procedure

Table of st2e by atype				
st2e(Store does not stock non utility-discounted CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	166 28.42 32.68 68.60	45 7.71 8.86 100.00	297 50.86 58.46 100.00	508 86.99
1	76 13.01 100.00 31.40	0 0.00 0.00 0.00	0 0.00 0.00 0.00	76 13.01
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST3: Did you carry ENERGY STAR CFL bulbs prior to participating in the [UTILITY] Upstream Lighting Program?

The FREQ Procedure

Table of st3 by atype				
st3(Carried ENERGY STAR CFLs prior to participating in program)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	13 2.23 100.00 5.37	0 0.00 0.00 0.00	0 0.00 0.00 0.00	13 2.23
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Refused	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Yes	112 19.18 100.00 46.28	0 0.00 0.00 0.00	0 0.00 0.00 0.00	112 19.18
No	105 17.98 100.00 43.39	0 0.00 0.00 0.00	0 0.00 0.00 0.00	105 17.98
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST4_1: Which of the following types of non-CFL lighting to you stock on a regular basis: Incandescent bulbs

The FREQ Procedure

Table of st4_1 by atype				
st4_1(Incandescent stocked on a regular basis)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Not Mentioned	50 8.56 45.45 20.66	8 1.37 7.27 17.78	52 8.90 47.27 17.51	110 18.84
Mentioned	192 32.88 40.51 79.34	37 6.34 7.81 82.22	245 41.95 51.69 82.49	474 81.16
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST4_2: Which of the following types of non-CFL lighting to you stock on a regular basis: Halogens

The FREQ Procedure

Table of st4_2 by atype				
st4_2(Halogens stocked on a regular basis)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Not Mentioned	124 21.23 56.11 51.24	13 2.23 5.88 28.89	84 14.38 38.01 28.28	221 37.84
Mentioned	118 20.21 32.51 48.76	32 5.48 8.82 71.11	213 36.47 58.68 71.72	363 62.16
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST4_3: Which of the following types of non-CFL lighting to you stock on a regular basis: LED lights

The FREQ Procedure

Table of st4_3 by atype				
st4_3(LED lights stocked on a regular basis)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Not Mentioned	148 25.34 52.11 61.16	21 3.60 7.39 46.67	115 19.69 40.49 38.72	284 48.63
Mentioned	94 16.10 31.33 38.84	24 4.11 8.00 53.33	182 31.16 60.67 61.28	300 51.37
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST4_4: Which of the following types of non-CFL lighting to you stock on a regular basis: Other (SPECIFY)

The FREQ Procedure

Table of st4_4 by atype				
st4_4(Other types of lights stocked on a regular basis)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Not Mentioned	195 33.39 43.62 80.58	36 6.16 8.05 80.00	216 36.99 48.32 72.73	447 76.54
Mentioned	47 8.05 34.31 19.42	9 1.54 6.57 20.00	81 13.87 59.12 27.27	137 23.46
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST4_5: Which of the following types of non-CFL lighting to you stock on a regular basis: DONT KNOW

The FREQ Procedure

Table of st4_5 by atype				
st4_5(Don't know what types of lights are stocked on a regular basis)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Not Mentioned	239 40.92 41.57 98.76	41 7.02 7.13 91.11	295 50.51 51.30 99.33	575 98.46
Mentioned	3 0.51 33.33 1.24	4 0.68 44.44 8.89	2 0.34 22.22 0.67	9 1.54
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST4_6: Which of the following types of non-CFL lighting to you stock on a regular basis: REFUSED

The FREQ Procedure

Table of st4_6 by atype				
st4_6(Refused to disclose what types of lights are stocked on a regular basis)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Not Mentioned	242 41.44 41.58 100.00	45 7.71 7.73 100.00	295 50.51 50.69 99.33	582 99.66
Mentioned	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.34 100.00 0.67	2 0.34
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST4_7: Which of the following types of non-CFL lighting to you stock on a regular basis: None

The FREQ Procedure

Table of st4_7 by atype				
st4_7(No other types of lights stock on a regular basis)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	0 0.00 0.00 0.00	45 7.71 13.16 100.00	297 50.86 86.84 100.00	342 58.56
Not Mentioned	209 35.79 100.00 86.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	209 35.79
Mentioned	33 5.65 100.00 13.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	33 5.65
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST5a: (According to your best estimate what percentage of the lighting products currently on your sales floor can be attributed to the following lighting types) CFLs

The MEANS Procedure

Analysis Variable : st5a Percent of lighting products on sales floor- CFLs						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	227	57.5814978	30.4768331	0	100.0000000
CA Non-Participant	45	40	51.7000000	26.2377688	10.0000000	100.0000000
Comparison Area	297	276	41.5942029	25.7827674	0	100.0000000

ST5b: (According to your best estimate what percentage of the lighting products currently on your sales floor can be attributed to the following lighting types) LEDs

The MEANS Procedure

Analysis Variable : st5b Percent of lighting products on sales floor-LEDs						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	227	3.2202643	6.1590234	0	30.0000000
CA Non-Participant	45	40	9.2500000	11.1832063	0	40.0000000
Comparison Area	297	276	8.0000000	12.3588761	0	80.0000000

ST5c: (According to your best estimate what percentage of the lighting products currently on your sales floor can be attributed to the following lighting types)Incandescent bulbs

The MEANS Procedure

Analysis Variable : st5c Percent of lighting products on sales floor-Incandescents						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	227	31.7092511	27.8738316	0	100.0000000
CA Non-Participant	45	40	32.4500000	24.5700986	0	80.0000000
Comparison Area	297	276	41.0543478	28.6282876	0	100.0000000

ST5d: (According to your best estimate what percentage of the lighting products currently on your sales floor can be attributed to the following lighting types) Other

The MEANS Procedure

Analysis Variable : st5d Percent of lighting products on sales floor- Other						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	227	7.4889868	13.0283426	0	100.0000000
CA Non-Participant	45	40	6.6000000	9.3830179	0	30.0000000
Comparison Area	297	276	9.2463768	13.2658477	0	85.0000000

ST6: Does the light bulb stocking pattern you just described reflect your typical stocking pattern?

The FREQ Procedure

Table of st6 by atype				
st6(Stocking pattern described is typical)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	3 0.51 30.00 1.24	1 0.17 10.00 2.22	6 1.03 60.00 2.02	10 1.71
Yes	218 37.33 40.60 90.08	42 7.19 7.82 93.33	277 47.43 51.58 93.27	537 91.95
No	21 3.60 56.76 8.68	2 0.34 5.41 4.44	14 2.40 37.84 4.71	37 6.34
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST7: How does it differ?

The FREQ Procedure

Table of st7 by atype				
st7(Stocking pattern is not typical - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.34 100.00 0.67	2 0.34
Missing	221 37.84 40.40 91.32	43 7.36 7.86 95.56	283 48.46 51.74 95.29	547 93.66
Response Recorded	21 3.60 60.00 8.68	2 0.34 5.71 4.44	12 2.05 34.29 4.04	35 5.99
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST8: Is the current stocking pattern you described similar to the stocking pattern this time last year (May/June 2008)?

The FREQ Procedure

Table of st8 by atype				
st8(Stocking pattern is similar to stocking pattern last year (June-July 2008))	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	15 2.57 40.54 6.20	4 0.68 10.81 8.89	18 3.08 48.65 6.06	37 6.34
Yes	168 28.77 48.84 69.42	25 4.28 7.27 55.56	151 25.86 43.90 50.84	344 58.90
No	59 10.10 29.06 24.38	16 2.74 7.88 35.56	128 21.92 63.05 43.10	203 34.76
Total	242 41.44	45 7.71	297 50.86	584 100.00

The FREQ Procedure

Table of st9 by atype				
st9(How does stocking pattern differ from last year- open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	183 31.34 48.03 75.62	29 4.97 7.61 64.44	169 28.94 44.36 56.90	381 65.24
Response Recorded	59 10.10 29.06 24.38	16 2.74 7.88 35.56	128 21.92 63.05 43.10	203 34.76
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST10: Given the CFL stock you currently have on your sales floor how many weeks do you estimate it would take to sell out all of your CFL bulbs if you did not restock them?

The MEANS Procedure

Analysis Variable : st10 Number of weeks to sell out of all CFL bulbs on floor without restocking						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	202	20.5099010	65.4636157	1.0000000	888.0000000
CA Non-Participant	45	38	10.4473684	17.9815181	1.0000000	100.0000000
Comparison Area	297	258	11.1356589	24.0646221	0	247.0000000

ST11: How many weeks would it take to sell out of the incandescent bulbs currently on your sales floor if you did not restock them ?

The MEANS Procedure

Analysis Variable : st11 Number of weeks to sell out of incandescent bulbs on floor without restocking						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	165	13.3818182	15.9627893	0	100.0000000
CA Non-Participant	45	32	8.4375000	11.3420073	1.0000000	56.0000000
Comparison Area	297	228	8.9166667	15.7596787	0	156.0000000

ST12: On Average how many weeks do you estimate it would take to sell out all of the [UTILITY] Upstream Lighting Program CFL bulbs from a single shipment of program bulbs?

The MEANS Procedure

Analysis Variable : st12 Number of weeks to sell out of utility-discounted CFL bulbs from single shipment						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	189	19.8042328	24.9089573	1.0000000	200.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST13: Do you stock standard ENERGY STAR CFLs year round?

The FREQ Procedure

Table of st13 by atype				
st13(Stock standand ENERGY STAR CFLs year round)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51 100.00 1.01	3 0.51
Missing	101 17.29 75.37 41.74	1 0.17 0.75 2.22	32 5.48 23.88 10.77	134 22.95
Yes	133 22.77 30.57 54.96	41 7.02 9.43 91.11	261 44.69 60.00 87.88	435 74.49
No	8 1.37 66.67 3.31	3 0.51 25.00 6.67	1 0.17 8.33 0.34	12 2.05
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST14: Why not?

The FREQ Procedure

Table of st14 by atype				
st14(Why standard CFLs aren't stocked year round - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	1 0.17 33.33 0.41	1 0.17 33.33 2.22	1 0.17 33.33 0.34	3 0.51
Missing	234 40.07 41.05 96.69	42 7.19 7.37 93.33	294 50.34 51.58 98.99	570 97.60
Response Recorded	7 1.20 63.64 2.89	2 0.34 18.18 4.44	2 0.34 18.18 0.67	11 1.88
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST15: Does your stocking pattern for standard ENERGY STAR CFLs have seasonal cycles or otherwise fluctuate during the year?

The FREQ Procedure

Table of st15 by atype				
st15(Stocking pattern for standard ENERGY STAR CFLs fluctuates)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	7 1.20 43.75 2.89	1 0.17 6.25 2.22	8 1.37 50.00 2.69	16 2.74
Missing	101 17.29 76.52 41.74	1 0.17 0.76 2.22	30 5.14 22.73 10.10	132 22.60
Yes	52 8.90 38.52 21.49	12 2.05 8.89 26.67	71 12.16 52.59 23.91	135 23.12
No	82 14.04 27.24 33.88	31 5.31 10.30 68.89	188 32.19 62.46 63.30	301 51.54
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST16a2: Please describe when during the year your stocking pattern for standard ENERGY STAR CFLs fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st16a2 First fluctuation of standard ENERGY STAR CFLs: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	40	42.9500000	63.1392235	5.0000000	300.0000000
CA Non-Participant	45	8	18.1250000	8.4250901	10.0000000	30.0000000
Comparison Area	297	55	23.2000000	18.1234450	4.0000000	100.0000000

T16a3: Please describe when during the year your stocking pattern for standard ENERGY STAR CFLs fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st16a3 by atype				
st16a3(First fluctuation of standard ENERGY STAR CFLs: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	2 0.34 50.00 0.83	0 0.00 0.00 0.00	2 0.34 50.00 0.67	4 0.68
Missing	190 32.53 42.32 78.51	33 5.65 7.35 73.33	226 38.70 50.33 76.09	449 76.88
Increase	48 8.22 38.40 19.83	11 1.88 8.80 24.44	66 11.30 52.80 22.22	125 21.40
Decrease	2 0.34 33.33 0.83	1 0.17 16.67 2.22	3 0.51 50.00 1.01	6 1.03
Total	242 41.44	45 7.71	297 50.86	584 100.00

st16ax1: More changes

The FREQ Procedure

Table of st16ax1 by atype				
st16ax1(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	192 32.88 42.38 79.34	33 5.65 7.28 73.33	228 39.04 50.33 76.77	453 77.57
1	12 2.05 46.15 4.96	3 0.51 11.54 6.67	11 1.88 42.31 3.70	26 4.45
2	38 6.51 36.19 15.70	9 1.54 8.57 20.00	58 9.93 55.24 19.53	105 17.98
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST16b2: Please describe when during the year your stocking pattern for standard ENERGY STAR CFLs fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st16b2 Second fluctuation of standard ENERGY STAR CFLs: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	10	23.6000000	19.5402718	5.0000000	66.0000000
CA Non-Participant	45	1	3.0000000	.	3.0000000	3.0000000
Comparison Area	297	7	11.1428571	3.9761192	8.0000000	20.0000000

ST16b3: Please describe when during the year your stocking pattern for standard ENERGY STAR CFLs fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st16b3 by atype				
st16b3(Second fluctuation of standard ENERGY STAR CFLs: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	230 39.38 41.22 95.04	42 7.19 7.53 93.33	286 48.97 51.25 96.30	558 95.55
Increase	5 0.86 29.41 2.07	2 0.34 11.76 4.44	10 1.71 58.82 3.37	17 2.91
Decrease	7 1.20 77.78 2.89	1 0.17 11.11 2.22	1 0.17 11.11 0.34	9 1.54
Total	242 41.44	45 7.71	297 50.86	584 100.00

st16x2: More changes

The FREQ Procedure

Table of st16x2 by atype				
st16x2(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	230 39.38 41.22 95.04	42 7.19 7.53 93.33	286 48.97 51.25 96.30	558 95.55
1	1 0.17 50.00 0.41	0 0.00 0.00 0.00	1 0.17 50.00 0.34	2 0.34
2	11 1.88 45.83 4.55	3 0.51 12.50 6.67	10 1.71 41.67 3.37	24 4.11
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST16c2: Please describe when during the year your stocking pattern for standard ENERGY STAR CFLs fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st16c2 Third fluctuation of standard ENERGY STAR CFLs: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	1	8.0000000	.	8.0000000	8.0000000

ST16c3: Please describe when during the year your stocking pattern for standard ENERGY STAR CFLs fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st16c3 by atype				
st16c3(Third fluctuation of standard ENERGY STAR CFLs: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	241 41.27 41.41 99.59	45 7.71 7.73 100.00	296 50.68 50.86 99.66	582 99.66
Increase	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17 100.00 0.34	1 0.17
Decrease	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Total	242 41.44	45 7.71	297 50.86	584 100.00

st16x3: More changes

The FREQ Procedure

Table of st16x3 by atype				
st16x3(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	241 41.27 41.41 99.59	45 7.71 7.73 100.00	296 50.68 50.86 99.66	582 99.66
2	1 0.17 50.00 0.41	0 0.00 0.00 0.00	1 0.17 50.00 0.34	2 0.34
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST16d2: Please describe when during the year your stocking pattern for standard ENERGY STAR CFLs fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st16d2 Fourth fluctuation of standard ENERGY STAR CFLs: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST16d3: Please describe when during the year your stocking pattern for standard ENERGY STAR CFLs fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st16d3 by atype				
st16d3(Fourth fluctuation of standard ENERGY STAR CFLs: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	242 41.44 41.44 100.00	45 7.71 7.71 100.00	297 50.86 50.86 100.00	584 100.00
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST17: Do you stock [UTILITY]-discounted CFLs year round?

The FREQ Procedure

Table of st17 by atype				
st17(Utility-discounted CFLs are stocked year-round)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
Missing	24 4.11 6.56 9.92	45 7.71 12.30 100.00	297 50.86 81.15 100.00	366 62.67
Yes	162 27.74 100.00 66.94	0 0.00 0.00 0.00	0 0.00 0.00 0.00	162 27.74
No	53 9.08 100.00 21.90	0 0.00 0.00 0.00	0 0.00 0.00 0.00	53 9.08
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST18: Does your stocking pattern for [UTILITY]-discounted CFLs have seasonal cycles or otherwise fluctuate during the year?

The FREQ Procedure

Table of st18 by atype				
st18(Stocking pattern for utility-discounted CFLs fluctuates)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	16 2.74 100.00 6.61	0 0.00 0.00 0.00	0 0.00 0.00 0.00	16 2.74
Missing	14 2.40 3.93 5.79	45 7.71 12.64 100.00	297 50.86 83.43 100.00	356 60.96
Yes	88 15.07 100.00 36.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	88 15.07
No	124 21.23 100.00 51.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	124 21.23
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST19a2: Please describe when during the year your stocking pattern for [UTILITY]-discounted CFLs fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st19a2 First fluctuation of utility-discounted CFLs: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	61	60.3770492	142.7489829	1.0000000	1000.00
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST19a3: Please describe when during the year your stocking pattern for [UTILITY]-discounted CFLs fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st19a3 by atype				
st19a3(First fluctuation of utility-discounted CFLs: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	6 1.03 100.00 2.48	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 1.03
Missing	154 26.37 31.05 63.64	45 7.71 9.07 100.00	297 50.86 59.88 100.00	496 84.93
Increase	76 13.01 100.00 31.40	0 0.00 0.00 0.00	0 0.00 0.00 0.00	76 13.01
Decrease	6 1.03 100.00 2.48	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 1.03
Total	242 41.44	45 7.71	297 50.86	584 100.00

st19x1: More changes

The FREQ Procedure

Table of st19x1 by atype				
st19x1(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	160 27.40 31.87 66.12	45 7.71 8.96 100.00	297 50.86 59.16 100.00	502 85.96
1	9 1.54 100.00 3.72	0 0.00 0.00 0.00	0 0.00 0.00 0.00	9 1.54
2	73 12.50 100.00 30.17	0 0.00 0.00 0.00	0 0.00 0.00 0.00	73 12.50
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST19b2: Please describe when during the year your stocking pattern for [UTILITY]-discounted CFLs fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st19b2 Second fluctuation of utility-discounted CFLs: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	9	19.7777778	18.0746907	3.0000000	50.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST19b3: Please describe when during the year your stocking pattern for [UTILITY]-discounted CFLs fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st19b3 by atype				
st19b3(Second fluctuation of utility-discounted CFLs: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	233 39.90 40.52 96.28	45 7.71 7.83 100.00	297 50.86 51.65 100.00	575 98.46
Increase	4 0.68 100.00 1.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.68
Decrease	5 0.86 100.00 2.07	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 0.86
Total	242 41.44	45 7.71	297 50.86	584 100.00

st19x2: More changes

The FREQ Procedure

Table of st19x2 by atype				
st19x2(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	233 39.90 40.52 96.28	45 7.71 7.83 100.00	297 50.86 51.65 100.00	575 98.46
2	9 1.54 100.00 3.72	0 0.00 0.00 0.00	0 0.00 0.00 0.00	9 1.54
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST19c2: Please describe when during the year your stocking pattern for [UTILITY]-discounted CFLs fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st19c2 Third fluctuation of utility-discounted CFLs: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST19c3: Please describe when during the year your stocking pattern for [UTILITY]-discounted CFLs fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st19c3 by atype				
st19c3(Third fluctuation of utility-discounted CFLs: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	242 41.44 41.44 100.00	45 7.71 7.71 100.00	297 50.86 50.86 100.00	584 100.00
Total	242 41.44	45 7.71	297 50.86	584 100.00

st19x3: More changes

The FREQ Procedure

Table of st19x3 by atype				
st19x3(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	242 41.44 41.44 100.00	45 7.71 7.71 100.00	297 50.86 50.86 100.00	584 100.00
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST19d2: Please describe when during the year your stocking pattern for [UTILITY]-discounted CFLs fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st19d2 Fourth fluctuation of utility-discounted CFLs: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST19d3: Please describe when during the year your stocking pattern for [UTILITY]-discounted CFLs fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st19d3 by atype				
st19d3(Fourth fluctuation of utility-discounted CFLs: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	242 41.44 41.44 100.00	45 7.71 7.71 100.00	297 50.86 50.86 100.00	584 100.00
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST20: You said earlier that you sell specialty CFLs such as dimmable 3-way or reflector CFLs. Do you stock specialty CFLs year round?

The FREQ Procedure

Table of st20 by atype				
st20(Stock specialty CFLs year round)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Missing	126 21.58 57.01 52.07	15 2.57 6.79 33.33	80 13.70 36.20 26.94	221 37.84
Skip Error	2 0.34 13.33 0.83	0 0.00 0.00 0.00	13 2.23 86.67 4.38	15 2.57
Yes	97 16.61 30.50 40.08	27 4.62 8.49 60.00	194 33.22 61.01 65.32	318 54.45
No	16 2.74 55.17 6.61	3 0.51 10.34 6.67	10 1.71 34.48 3.37	29 4.97
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST21: Does your stocking pattern for specialty CFLs have seasonal cycles or otherwise fluctuate during the year?

The FREQ Procedure

Table of st21 by atype				
st21(Stocking pattern for specialty CFLs fluctuates)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	5 0.86 33.33 2.07	0 0.00 0.00 0.00	10 1.71 66.67 3.37	15 2.57
Missing	126 21.58 57.01 52.07	15 2.57 6.79 33.33	80 13.70 36.20 26.94	221 37.84
Skip Error	2 0.34 13.33 0.83	0 0.00 0.00 0.00	13 2.23 86.67 4.38	15 2.57
Yes	35 5.99 46.05 14.46	5 0.86 6.58 11.11	36 6.16 47.37 12.12	76 13.01
No	74 12.67 28.79 30.58	25 4.28 9.73 55.56	158 27.05 61.48 53.20	257 44.01
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST22a2: Please describe when during the year your stocking pattern for specialty CFLs fluctuates and for each of these time periods: Percent Change

The MEANS Procedure

Analysis Variable : st22a2 First fluctuation of specialty CFLs: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	22	109.8181818	217.0711177	5.0000000	1000.00
CA Non-Participant	45	4	20.0000000	8.1649658	10.0000000	30.0000000
Comparison Area	297	25	23.1200000	26.0341442	0	100.0000000

ST22a3: Please describe when during the year your stocking pattern for specialty CFLs fluctuates and for each of these time periods: Was this an increase or a decrease?

The FREQ Procedure

Table of st22a3 by atype				
st22a3(First fluctuation of specialty CFLs: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	4 0.68 36.36 1.65	1 0.17 9.09 2.22	6 1.03 54.55 2.02	11 1.88
Missing	205 35.10 41.58 84.71	40 6.85 8.11 88.89	248 42.47 50.30 83.50	493 84.42
Skip Error	2 0.34 13.33 0.83	0 0.00 0.00 0.00	13 2.23 86.67 4.38	15 2.57
Increase	28 4.79 47.46 11.57	3 0.51 5.08 6.67	28 4.79 47.46 9.43	59 10.10
Decrease	3 0.51 50.00 1.24	1 0.17 16.67 2.22	2 0.34 33.33 0.67	6 1.03
Total	242 41.44	45 7.71	297 50.86	584 100.00

st22x1: More changes

The FREQ Procedure

Table of st22x1 by atype				
st22x1(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	209 35.79 41.47 86.36	41 7.02 8.13 91.11	254 43.49 50.40 85.52	504 86.30
A	2 0.34 13.33 0.83	0 0.00 0.00 0.00	13 2.23 86.67 4.38	15 2.57
1	5 0.86 62.50 2.07	1 0.17 12.50 2.22	2 0.34 25.00 0.67	8 1.37
2	26 4.45 45.61 10.74	3 0.51 5.26 6.67	28 4.79 49.12 9.43	57 9.76
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST22b2: Please describe when during the year your stocking pattern for specialty CFLs fluctuates and for each of these time periods: Percent Change

The MEANS Procedure

Analysis Variable : st22b2 Second fluctuation of specialty CFLs: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	5	30.0000000	20.3100960	5.0000000	50.0000000
CA Non-Participant	45	1	3.0000000	.	3.0000000	3.0000000
Comparison Area	297	2	52.5000000	67.1751442	5.0000000	100.0000000

ST22b3: Please describe when during the year your stocking pattern for specialty CFLs fluctuates and for each of these time periods: Was this an increase or a decrease?

The FREQ Procedure

Table of st22b3 by atype				
st22b3(Second fluctuation of specialty CFLs: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	235 40.24 41.89 97.11	44 7.53 7.84 97.78	282 48.29 50.27 94.95	561 96.06
Skip Error	2 0.34 13.33 0.83	0 0.00 0.00 0.00	13 2.23 86.67 4.38	15 2.57
Increase	4 0.68 66.67 1.65	0 0.00 0.00 0.00	2 0.34 33.33 0.67	6 1.03
Decrease	1 0.17 50.00 0.41	1 0.17 50.00 2.22	0 0.00 0.00 0.00	2 0.34
Total	242 41.44	45 7.71	297 50.86	584 100.00

st22x2: More changes

The FREQ Procedure

Table of st22x2 by atype				
st22x2(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	235 40.24 41.89 97.11	44 7.53 7.84 97.78	282 48.29 50.27 94.95	561 96.06
A	2 0.34 13.33 0.83	0 0.00 0.00 0.00	13 2.23 86.67 4.38	15 2.57
1	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
2	4 0.68 57.14 1.65	1 0.17 14.29 2.22	2 0.34 28.57 0.67	7 1.20
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST22c2: Please describe when during the year your stocking pattern for specialty CFLs fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st22c2 Third fluctuation of specialty CFLs: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST22c3: Please describe when during the year your stocking pattern for specialty CFLs fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st22c3 by atype				
st22c3(Third fluctuation of specialty CFLs: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	239 40.92 42.08 98.76	45 7.71 7.92 100.00	284 48.63 50.00 95.62	568 97.26
Skip Error	2 0.34 13.33 0.83	0 0.00 0.00 0.00	13 2.23 86.67 4.38	15 2.57
Increase	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Total	242 41.44	45 7.71	297 50.86	584 100.00

st22x3: More changes

The FREQ Procedure

Table of st22x3 by atype				
st22x3(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	239 40.92 42.08 98.76	45 7.71 7.92 100.00	284 48.63 50.00 95.62	568 97.26
A	2 0.34 13.33 0.83	0 0.00 0.00 0.00	13 2.23 86.67 4.38	15 2.57
2	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST22d2: Please describe when during the year your stocking pattern for specialty CFLs fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st22d2 Fourth fluctuation of specialty CFLs: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST22d3: Please describe when during the year your stocking pattern for specialty CFLs fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st22d3 by atype				
st22d3(Fourth fluctuation of specialty CFLs: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	240 41.10 42.18 99.17	45 7.71 7.91 100.00	284 48.63 49.91 95.62	569 97.43
Skip Error	2 0.34 13.33 0.83	0 0.00 0.00 0.00	13 2.23 86.67 4.38	15 2.57
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST26a2: Please describe when during the year your stocking pattern for ENERGY STAR CFL fixtures fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st26a2 First fluctuation of ENERGY STAR CFL fixtures: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	19	31.3157895	32.8718938	0	100.0000000
CA Non-Participant	45	2	105.0000000	134.3502884	10.0000000	200.0000000
Comparison Area	297	15	29.2666667	32.2500646	1.0000000	100.0000000

ST26a3: Please describe when during the year your stocking pattern for ENERGY STAR CFL fixtures fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st26a3 by atype				
st26a3(First fluctuation of ENERGY STAR CFL fixtures: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	2 0.34 33.33 0.83	1 0.17 16.67 2.22	3 0.51 50.00 1.01	6 1.03
Missing	216 36.99 40.68 89.26	41 7.02 7.72 91.11	274 46.92 51.60 92.26	531 90.92
Increase	23 3.94 53.49 9.50	3 0.51 6.98 6.67	17 2.91 39.53 5.72	43 7.36
Decrease	1 0.17 25.00 0.41	0 0.00 0.00 0.00	3 0.51 75.00 1.01	4 0.68
Total	242 41.44	45 7.71	297 50.86	584 100.00

st26x1: More changes

The FREQ Procedure

Table of st26x1 by atype				
st26x1(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	218 37.33 40.82 90.08	41 7.02 7.68 91.11	275 47.09 51.50 92.59	534 91.44
A	0 0.00 0.00 0.00	1 0.17 33.33 2.22	2 0.34 66.67 0.67	3 0.51
1	6 1.03 75.00 2.48	0 0.00 0.00 0.00	2 0.34 25.00 0.67	8 1.37
2	18 3.08 46.15 7.44	3 0.51 7.69 6.67	18 3.08 46.15 6.06	39 6.68
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST26b2: Please describe when during the year your stocking pattern for ENERGY STAR CFL fixtures fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st26b2 Second fluctuation of ENERGY STAR CFL fixtures: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	6	33.3333333	34.4480285	10.0000000	100.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	2	52.5000000	67.1751442	5.0000000	100.0000000

ST26b3: Please describe when during the year your stocking pattern for ENERGY STAR CFL fixtures fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st26b3 by atype				
st26b3(Second fluctuation of ENERGY STAR CFL fixtures: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	236 40.41 41.26 97.52	44 7.53 7.69 97.78	292 50.00 51.05 98.32	572 97.95
Skip Error	0 0.00 0.00 0.00	1 0.17 25.00 2.22	3 0.51 75.00 1.01	4 0.68
Increase	3 0.51 60.00 1.24	0 0.00 0.00 0.00	2 0.34 40.00 0.67	5 0.86
Decrease	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
Total	242 41.44	45 7.71	297 50.86	584 100.00

st26x2: More changes

The FREQ Procedure

Table of st26x2 by atype				
st26x2(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	236 40.41 41.26 97.52	44 7.53 7.69 97.78	292 50.00 51.05 98.32	572 97.95
A	0 0.00 0.00 0.00	1 0.17 25.00 2.22	3 0.51 75.00 1.01	4 0.68
1	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
2	5 0.86 71.43 2.07	0 0.00 0.00 0.00	2 0.34 28.57 0.67	7 1.20
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST26c2: Please describe when during the year your stocking pattern for ENERGY STAR CFL fixtures fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st26c2 Third fluctuation of ENERGY STAR CFL fixtures: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	1	10.0000000	.	10.0000000	10.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST26c3: Please describe when during the year your stocking pattern for ENERGY STAR CFL fixtures fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st26c3 by atype				
st26c3(Third fluctuation of ENERGY STAR CFL fixtures: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	241 41.27 41.62 99.59	44 7.53 7.60 97.78	294 50.34 50.78 98.99	579 99.14
Skip Error	0 0.00 0.00 0.00	1 0.17 25.00 2.22	3 0.51 75.00 1.01	4 0.68
Decrease	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Total	242 41.44	45 7.71	297 50.86	584 100.00

st26x3: More changes

The FREQ Procedure

Table of st26x3 by atype				
st26x3(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	241 41.27 41.62 99.59	44 7.53 7.60 97.78	294 50.34 50.78 98.99	579 99.14
A	0 0.00 0.00 0.00	1 0.17 25.00 2.22	3 0.51 75.00 1.01	4 0.68
2	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST26d2: Please describe when during the year your stocking pattern for ENERGY STAR CFL fixtures fluctuates: Percent Change

The MEANS Procedure

Analysis Variable : st26d2 Fourth fluctuation of ENERGY STAR CFL fixtures: percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST26d3: Please describe when during the year your stocking pattern for ENERGY STAR CFL fixtures fluctuates: Was this an increase or a decrease?

The FREQ Procedure

Table of st26d3 by atype				
st26d3(Fourth fluctuation of ENERGY STAR CFL fixtures: increase or decrease in stock)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	242 41.44 41.72 100.00	44 7.53 7.59 97.78	294 50.34 50.69 98.99	580 99.32
Skip Error	0 0.00 0.00 0.00	1 0.17 25.00 2.22	3 0.51 75.00 1.01	4 0.68
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST27: In the last year has the number of models of ENERGY STAR light bulbs that your store carries gone up down or remained the same.

The FREQ Procedure

Table of st27 by atype				
st27(Models of ENERGY STAR light bulbs carried has changed in the last year)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	8 1.37 40.00 3.31	2 0.34 10.00 4.44	10 1.71 50.00 3.37	20 3.42
Refused	1 0.17 50.00 0.41	0 0.00 0.00 0.00	1 0.17 50.00 0.34	2 0.34
Carrying More	85 14.55 30.04 35.12	25 4.28 8.83 55.56	173 29.62 61.13 58.25	283 48.46
Carrying Less	14 2.40 73.68 5.79	1 0.17 5.26 2.22	4 0.68 21.05 1.35	19 3.25
Carrying the Same	134 22.95 51.54 55.37	17 2.91 6.54 37.78	109 18.66 41.92 36.70	260 44.52
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST28: How about over the past three years? Has the number of models of energy efficient light bulbs that your store carries over the past three years gone up down or remained the same.

The FREQ Procedure

Table of st28 by atype				
st28(Models of ENERGY STAR light bulbs carried has changed in the last three years)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	28 4.79 33.73 11.57	10 1.71 12.05 22.22	45 7.71 54.22 15.15	83 14.21
Refused	2 0.34 66.67 0.83	0 0.00 0.00 0.00	1 0.17 33.33 0.34	3 0.51
Carrying More	130 22.26 36.72 53.72	23 3.94 6.50 51.11	201 34.42 56.78 67.68	354 60.62
Carrying Less	11 1.88 68.75 4.55	1 0.17 6.25 2.22	4 0.68 25.00 1.35	16 2.74
Carrying the Same	71 12.16 55.47 29.34	11 1.88 8.59 24.44	46 7.88 35.94 15.49	128 21.92
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST29: How has participating in the program affected the number of models of ENERGY STAR light bulbs that your store carried in the last year?

The FREQ Procedure

Table of st29 by atype				
st29(How program affected number of models being carried in store in the last year)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	9 1.54 100.00 3.72	0 0.00 0.00 0.00	0 0.00 0.00 0.00	9 1.54
Missing	19 3.25 5.26 7.85	45 7.71 12.47 100.00	297 50.86 82.27 100.00	361 61.82
Carrying More	105 17.98 100.00 43.39	0 0.00 0.00 0.00	0 0.00 0.00 0.00	105 17.98
Carrying Less	17 2.91 100.00 7.02	0 0.00 0.00 0.00	0 0.00 0.00 0.00	17 2.91
Carrying the Same	92 15.75 100.00 38.02	0 0.00 0.00 0.00	0 0.00 0.00 0.00	92 15.75
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST30: How about over the past three years? How has participating in the program affected the number of models of ENERGY STAR light bulbs that your store carried over the past three years (2006-2008)?

The FREQ Procedure

Table of st30 by atype				
st30(How program affected number of models being carried in store in the last three year)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	23 3.94 100.00 9.50	0 0.00 0.00 0.00	0 0.00 0.00 0.00	23 3.94
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Refused	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Carrying More	122 20.89 100.00 50.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	122 20.89
Carrying Less	13 2.23 100.00 5.37	0 0.00 0.00 0.00	0 0.00 0.00 0.00	13 2.23
Carrying the Same	72 12.33 100.00 29.75	0 0.00 0.00 0.00	0 0.00 0.00 0.00	72 12.33
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST31: Our records indicate that approximately [Bulbs] [UTILITY]-discounted bulbs were shipped to your store during 2006-2008. What percent of those bulbs were sold as of December 31 2008?

The MEANS Procedure

Analysis Variable : st31 Percent of utility-discounted bulbs sold as of December 31, 2008						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	178	76.8202247	22.8161712	10.0000000	100.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST32: Do you still have 2006-2008 [UTILITY]-discounted bulbs available at your store?

The FREQ Procedure

Table of st32 by atype				
st32(2006-2008 utility discounted bulbs are still available at store)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	7 1.20 100.00 2.89	0 0.00 0.00 0.00	0 0.00 0.00 0.00	7 1.20
Missing	58 9.93 14.50 23.97	45 7.71 11.25 100.00	297 50.86 74.25 100.00	400 68.49
Yes	112 19.18 100.00 46.28	0 0.00 0.00 0.00	0 0.00 0.00 0.00	112 19.18
No	65 11.13 100.00 26.86	0 0.00 0.00 0.00	0 0.00 0.00 0.00	65 11.13
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST33_1: What type of 2006-2008 [UTILITY]-discounted bulbs are available? Standard twister style CFL bulbs

The FREQ Procedure

Table of st33_1 by atype				
st33_1(Standard CFL 2006-2008 utility discounted bulbs still available)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	130 22.26 27.54 53.72	45 7.71 9.53 100.00	297 50.86 62.92 100.00	472 80.82
Not Mentioned	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
Mentioned	109 18.66 100.00 45.04	0 0.00 0.00 0.00	0 0.00 0.00 0.00	109 18.66
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST33_2: What type of 2006-2008 [UTILITY]-discounted bulbs are available? Specialty CFLs such as dimmable 3-way spotlights or reflector CFLs

The FREQ Procedure

Table of st33_2 by atype				
st33_2(Specialty CFL 2006-2008 utility discounted bulbs still available)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	130 22.26 27.54 53.72	45 7.71 9.53 100.00	297 50.86 62.92 100.00	472 80.82
Not Mentioned	94 16.10 100.00 38.84	0 0.00 0.00 0.00	0 0.00 0.00 0.00	94 16.10
Mentioned	18 3.08 100.00 7.44	0 0.00 0.00 0.00	0 0.00 0.00 0.00	18 3.08
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST33_3: What type of 2006-2008 [UTILITY]-discounted bulbs are available? DONT KNOW

The FREQ Procedure

Table of st33_3 by atype				
st33_3(Don't know what type of 2006-2008 utility discounted bulbs still available)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	130 22.26 27.54 53.72	45 7.71 9.53 100.00	297 50.86 62.92 100.00	472 80.82
Not Mentioned	111 19.01 100.00 45.87	0 0.00 0.00 0.00	0 0.00 0.00 0.00	111 19.01
Mentioned	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST33_4: What type of 2006-2008 [UTILITY]-discounted bulbs are available? REFUSED

The FREQ Procedure

Table of st33_4 by atype				
st33_4(Refused to say what type of 2006-2008 utility discounted bulbs still available)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	130 22.26 27.54 53.72	45 7.71 9.53 100.00	297 50.86 62.92 100.00	472 80.82
Not Mentioned	112 19.18 100.00 46.28	0 0.00 0.00 0.00	0 0.00 0.00 0.00	112 19.18
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST34: What percentage of the [Bulbs] 2006-2008 [UTILITY]-discounted bulbs are still available at your store?

The MEANS Procedure

Analysis Variable : st34 Percent of 2006-2008 utility discounted bulbs still available in store						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	88	29.3181818	24.8533841	0	100.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST34: What percentage of the [Bulbs] 2006-2008 [UTILITY]-discounted b
store?

The FREQ Procedure

Table of st34 by aty		
st34(Percent of 2006-2008 utility discounted bulbs still available in store)	atype	
Frequency Percent Row Pct Col Pct	CA Participant	CA No Participa
Don't Know	24 4.11 100.00 9.92	0 0 0
Missing	130 22.26 27.54 53.72	7 9 100
0	1 0.17 100.00 0.41	0 0 0
1	4 0.68 100.00 1.65	0 0 0
2	4 0.68 100.00 1.65	0 0 0
5	6 1.03 100.00 2.48	0 0 0
6	1 0.17 100.00 0.41	0 0 0
7	1 0.17 100.00 0.41	0 0 0
10	14 2.40 100.00 5.79	0 0 0
15	2 0.34 100.00 0.83	0 0 0
20	11 1.88 100.00 4.55	0 0 0
25	6 1.03 100.00	0 0

ST34: What percentage of the [Bulbs] 2006-2008 [UTILITY]-discounted bulbs are still available at your store?

The FREQ Procedure

ST35M: Approximately when were the rest of the 2006-2008 program bulbs sold out? Months

The FREQ Procedure

Table of st35m by atype				
st35m(Month when utility discounted CFLs sold out)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	5 0.86 100.00 2.07	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 0.86
Missing	226 38.70 39.79 93.39	45 7.71 7.92 100.00	297 50.86 52.29 100.00	568 97.26
1	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
4	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
5	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
9	2 0.34 100.00 0.83	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.34
10	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
11	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
12	4 0.68 100.00 1.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.68

ST35M: Approximately when were the rest of the 2006-2008 program bulbs sold out? Months

The FREQ Procedure

Table of st35m by atype				
st35m(Month when utility discounted CFLs sold out)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST35Y: Approximately when were the rest of the 2006-2008 program bulbs sold out? Year

The FREQ Procedure

Table of st35y by atype				
st35y(Year when utility discounted CFLs sold out)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
Missing	226 38.70 39.79 93.39	45 7.71 7.92 100.00	297 50.86 52.29 100.00	568 97.26
2006	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
2007	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
2008	10 1.71 100.00 4.13	0 0.00 0.00 0.00	0 0.00 0.00 0.00	10 1.71
2009	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST36m: How long did a typical shipment of discounted CFLs last before being sold out? Months

The MEANS Procedure

Analysis Variable : st36m Amount of time shipment of utility-discounted CFLs lasted in months						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	186	5.3333333	8.6008590	0	77.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST36w: How long did a typical shipment of discounted CFLs last before being sold out? Weeks

The MEANS Procedure

Analysis Variable : st36w Amount of time shipment of utility-discounted CFLs lasted in weeks						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	186	1.7903226	6.5209942	0	77.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST36d: How long did a typical shipment of discounted CFLs last before being sold out? Days

The MEANS Procedure

Analysis Variable : st36d Amount of time shipment of utility-discounted CFLs lasted in days						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	186	0.5913978	5.7322918	0	77.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST37_1: If the supply of [UTILITY]-discounted CFLs in your store sells out what do you (or did you) typically do? Re-order more [UTILITY]-discounted products

The FREQ Procedure

Table of st37_1 by atype				
st37_1(Reorder more utility-discounted products when the utility-discounted CFLs sell out)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	166 28.42 100.00 68.60	0 0.00 0.00 0.00	0 0.00 0.00 0.00	166 28.42
Mentioned	65 11.13 100.00 26.86	0 0.00 0.00 0.00	0 0.00 0.00 0.00	65 11.13
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST37_2: If the supply of [UTILITY]-discounted CFLs in your store sells out what do you (or did you) typically do? Continue selling this same product at a non-discounted price.

The FREQ Procedure

Table of st37_2 by atype				
st37_2(Continue selling same product at non-discounted price when utility-discounted CFLs sell out)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	187 32.02 100.00 77.27	0 0.00 0.00 0.00	0 0.00 0.00 0.00	187 32.02
Mentioned	44 7.53 100.00 18.18	0 0.00 0.00 0.00	0 0.00 0.00 0.00	44 7.53
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST37_3: If the supply of [UTILITY]-discounted CFLs in your store sells out what do you (or did you) typically do? Continue selling this same product at a discount provided by the retailer.

The FREQ Procedure

Table of st37_3 by atype				
st37_3(Continue selling same product at a discount provided by retailed when utility-discounted CFLs sell out)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	219 37.50 100.00 90.50	0 0.00 0.00 0.00	0 0.00 0.00 0.00	219 37.50
Mentioned	12 2.05 100.00 4.96	0 0.00 0.00 0.00	0 0.00 0.00 0.00	12 2.05
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST37_4: If the supply of [UTILITY]-discounted CFLs in your store sells out what do you (or did you) typically do? Discontinue sales of this product

The FREQ Procedure

Table of st37_4 by atype				
st37_4(Discontinue sales of product when utility-discounted CFLs sell out)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	185 31.68 100.00 76.45	0 0.00 0.00 0.00	0 0.00 0.00 0.00	185 31.68
Mentioned	46 7.88 100.00 19.01	0 0.00 0.00 0.00	0 0.00 0.00 0.00	46 7.88
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST37_5: If the supply of [UTILITY]-discounted CFLs in your store sells out what do you (or did you) typically do? Other (SPECIFY)

The FREQ Procedure

Table of st37_5 by atype				
st37_5(Do something else when utility-discounted CFLs sell out)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	156 26.71 100.00 64.46	0 0.00 0.00 0.00	0 0.00 0.00 0.00	156 26.71
Mentioned	75 12.84 100.00 30.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	75 12.84
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST37_6: If the supply of [UTILITY]-discounted CFLs in your store sells out what do you (or did you) typically do? DONT KNOW

The FREQ Procedure

Table of st37_6 by atype				
st37_6(Don't know what is done when utility-discounted CFLs sell out)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	218 37.33 100.00 90.08	0 0.00 0.00 0.00	0 0.00 0.00 0.00	218 37.33
Mentioned	13 2.23 100.00 5.37	0 0.00 0.00 0.00	0 0.00 0.00 0.00	13 2.23
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST37_7: If the supply of [UTILITY]-discounted CFLs in your store sells out what do you (or did you) typically do? REFUSED

The FREQ Procedure

Table of st37_7 by atype				
st37_7(Refused to say what is done when utility-discounted CFLs sell out)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	231 39.55 100.00 95.45	0 0.00 0.00 0.00	0 0.00 0.00 0.00	231 39.55
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST38_1: What happens to [UTILITY]-discounted CFLs that remain unsold after a long period of time? Does not happen we sell all our discounted CFLs[SKIP TO ST41a]

The FREQ Procedure

Table of st38_1 by atype				
st38_1(All utility-discounted CFLs are sold, none remain unsold)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	151 25.86 100.00 62.40	0 0.00 0.00 0.00	0 0.00 0.00 0.00	151 25.86
Mentioned	80 13.70 100.00 33.06	0 0.00 0.00 0.00	0 0.00 0.00 0.00	80 13.70
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST38_2: What happens to [UTILITY]-discounted CFLs that remain unsold after a long period of time? We keep it on the shelves until we sell them[SKIP TO ST41a]

The FREQ Procedure

Table of st38_2 by atype				
st38_2(Keep all unsold utility-discounted CFLs on shelves until they are sold)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	99 16.95 100.00 40.91	0 0.00 0.00 0.00	0 0.00 0.00 0.00	99 16.95
Mentioned	132 22.60 100.00 54.55	0 0.00 0.00 0.00	0 0.00 0.00 0.00	132 22.60
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST38_3: What happens to [UTILITY]-discounted CFLs that remain unsold after a long period of time? We distribute it to another one of our stores

The FREQ Procedure

Table of st38_3 by atype				
st38_3(Distribute unsold utility-discounted CFLs to another store)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	223 38.18 100.00 92.15	0 0.00 0.00 0.00	0 0.00 0.00 0.00	223 38.18
Mentioned	8 1.37 100.00 3.31	0 0.00 0.00 0.00	0 0.00 0.00 0.00	8 1.37
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST38_4: What happens to [UTILITY]-discounted CFLs that remain unsold after a long period of time? We return it to the manufacturer

The FREQ Procedure

Table of st38_4 by atype				
st38_4(Return unsold utility-discounted CFLs to the manufacturer)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	230 39.38 100.00 95.04	0 0.00 0.00 0.00	0 0.00 0.00 0.00	230 39.38
Mentioned	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST38_5: What happens to [UTILITY]-discounted CFLs that remain unsold after a long period of time? We sell it to another lighting distributor/contractor/liquidator.

The FREQ Procedure

Table of st38_5 by atype				
st38_5(Sell unsold utility-discounted CFLs to another lighting distributor/contractor/liquidator)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	231 39.55 100.00 95.45	0 0.00 0.00 0.00	0 0.00 0.00 0.00	231 39.55
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST38_6: What happens to [UTILITY]-discounted CFLs that remain unsold after a long period of time? We give it away

The FREQ Procedure

Table of st38_6 by atype				
st38_6(Give away unsold utility-discounted CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	213 36.47 100.00 88.02	0 0.00 0.00 0.00	0 0.00 0.00 0.00	213 36.47
Mentioned	18 3.08 100.00 7.44	0 0.00 0.00 0.00	0 0.00 0.00 0.00	18 3.08
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST38_7: What happens to [UTILITY]-discounted CFLs that remain unsold after a long period of time? Other (SPECIFY)

The FREQ Procedure

Table of st38_7 by atype				
st38_7(Do something else with unsold utility-discounted CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	212 36.30 100.00 87.60	0 0.00 0.00 0.00	0 0.00 0.00 0.00	212 36.30
Mentioned	19 3.25 100.00 7.85	0 0.00 0.00 0.00	0 0.00 0.00 0.00	19 3.25
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST38_8: What happens to [UTILITY]-discounted CFLs that remain unsold after a long period of time? DONT KNOW

The FREQ Procedure

Table of st38_8 by atype				
st38_8(Don't know what happens to unsold utility-discounted CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	227 38.87 100.00 93.80	0 0.00 0.00 0.00	0 0.00 0.00 0.00	227 38.87
Mentioned	4 0.68 100.00 1.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.68
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST38_9: What happens to [UTILITY]-discounted CFLs that remain unsold after a long period of time? REFUSED

The FREQ Procedure

Table of st38_9 by atype				
st38_9(Refused to say what happens to unsold utility-discounted CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Not Mentioned	231 39.55 100.00 95.45	0 0.00 0.00 0.00	0 0.00 0.00 0.00	231 39.55
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST39: Would this unsold inventory ever be sold out of the [UTILITY] service territory or out-of-state?

The FREQ Procedure

Table of st39 by atype				
st39(Unsold inventory sold outside of utility service territory)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	4 0.68 100.00 1.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.68
Missing	216 36.99 38.71 89.26	45 7.71 8.06 100.00	297 50.86 53.23 100.00	558 95.55
No	22 3.77 100.00 9.09	0 0.00 0.00 0.00	0 0.00 0.00 0.00	22 3.77
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST40Y: How often do you estimate this happens? Times/Year

The MEANS Procedure

Analysis Variable : st40y Frequency unsold inventory is sold outside of utility service territory in months						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

ST40M: How often do you estimate this happens? Times/Month

The MEANS Procedure

Analysis Variable : st40m Frequency unsold inventory is sold outside of utility service territory in years						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

116 *ST41a: Have you ever received lighting products discounted from the California Upstream Lighting Program (PG&E SCE or SDG&E)?*

The FREQ Procedure

Table of st41a by atype				
st41a(Ever received utility discounted lighting products)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	1 0.17 2.27 0.41	4 0.68 9.09 8.89	39 6.68 88.64 13.13	44 7.53
Missing	231 39.55 100.00 95.45	0 0.00 0.00 0.00	0 0.00 0.00 0.00	231 39.55
Question added after fielding	0 0.00 0.00 0.00	0 0.00 0.00 0.00	35 5.99 100.00 11.78	35 5.99
Yes	2 0.34 10.00 0.83	16 2.74 80.00 35.56	2 0.34 10.00 0.67	20 3.42
No	8 1.37 3.15 3.31	25 4.28 9.84 55.56	221 37.84 87.01 74.41	254 43.49
Total	242 41.44	45 7.71	297 50.86	584 100.00

ST41bM: When did you receive this/these shipment(s)? Months

The MEANS Procedure

Analysis Variable : st41bm Month received utility discounted lighting products						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	18	6.8888889	3.3235150	1.0000000	12.0000000
CA Non-Participant	45	12	4.5833333	3.5791907	1.0000000	12.0000000
Comparison Area	297	2	8.0000000	5.6568542	4.0000000	12.0000000

ST41bY: When did you receive this/these shipment(s)? Year

The MEANS Procedure

Analysis Variable : st41by Year received utility discounted lighting products						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	24	2008.04	0.9545847	2006.00	2009.00
CA Non-Participant	45	14	2008.00	0.9607689	2006.00	2009.00
Comparison Area	297	2	2008.00	0	2008.00	2008.00

ST41c: Approximately how many bulbs were in the/these shipment(s)?

The MEANS Procedure

Analysis Variable : st41c Number of bulbs in shipment						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	16	2293.63	2897.83	100.0000000	10000.00
CA Non-Participant	45	13	1553.85	1687.65	50.0000000	5000.00
Comparison Area	297	2	185.0000000	190.9188309	50.0000000	320.0000000

TR1: Would your store stock standard ENERGY STAR CFLs without the support of [UTILITY] Upstream Lighting Program?

The FREQ Procedure

Table of tr1 by atype				
tr1(Store would stock CFLs without utility program)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	14 2.40 100.00 5.79	0 0.00 0.00 0.00	0 0.00 0.00 0.00	14 2.40
Missing	24 4.11 6.56 9.92	45 7.71 12.30 100.00	297 50.86 81.15 100.00	366 62.67
Refused	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Yes	148 25.34 100.00 61.16	0 0.00 0.00 0.00	0 0.00 0.00 0.00	148 25.34
No	55 9.42 100.00 22.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	55 9.42
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR2: If the discounted standard ENERGY STAR CFL bulbs were not available do you think your sales of these CFL bulbs would be about the same lower or higher?

The FREQ Procedure

Table of tr2 by atype				
tr2(Change in sales of CFLs if utility-discounted CFLs were not available)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	5 0.86 100.00 2.07	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 0.86
Missing	79 13.53 18.76 32.64	45 7.71 10.69 100.00	297 50.86 70.55 100.00	421 72.09
Same	30 5.14 100.00 12.40	0 0.00 0.00 0.00	0 0.00 0.00 0.00	30 5.14
Lower	120 20.55 100.00 49.59	0 0.00 0.00 0.00	0 0.00 0.00 0.00	120 20.55
Higher	8 1.37 100.00 3.31	0 0.00 0.00 0.00	0 0.00 0.00 0.00	8 1.37
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR3: Why do you think this is?

The FREQ Procedure

Table of tr3 by atype				
tr3(Why standard CFL sales would be different - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	4 0.68 100.00 1.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.68
Missing	29 4.97 7.82 11.98	45 7.71 12.13 100.00	297 50.86 80.05 100.00	371 63.53
Response Recorded	209 35.79 100.00 86.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	209 35.79
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR4: By what percentage do you estimate your stores sales of standard ENERGY STAR CFLs would be [TR2 higher/lower] during the 2006-2008 time period if the discounted CFLs were not available?

The MEANS Procedure

Analysis Variable : tr4 Percentage change in sales of CFLs if utility-discounted CFLs were not available						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	102	52.9215686	26.2062219	3.0000000	100.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

TR6: Would your store stock specialty CFLs without the support of the [UTILITY] Upstream Lighting Program?

The FREQ Procedure

Table of tr6 by atype				
tr6(Store would stock specialty CFLs without utility program)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
Missing	181 30.99 34.61 74.79	45 7.71 8.60 100.00	297 50.86 56.79 100.00	523 89.55
Skip Error	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Yes	41 7.02 100.00 16.94	0 0.00 0.00 0.00	0 0.00 0.00 0.00	41 7.02
No	16 2.74 100.00 6.61	0 0.00 0.00 0.00	0 0.00 0.00 0.00	16 2.74
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR7: If the discounted specialty CFLs were not available do you think your sales of these CFL bulbs would be about the same lower or higher?

The FREQ Procedure

Table of tr7 by atype				
tr7(Change in sales of CFLs if utility-discounted specialty CFLs were not available)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	197 33.73 36.55 81.40	45 7.71 8.35 100.00	297 50.86 55.10 100.00	539 92.29
Skip Error	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Same	12 2.05 100.00 4.96	0 0.00 0.00 0.00	0 0.00 0.00 0.00	12 2.05
Lower	29 4.97 100.00 11.98	0 0.00 0.00 0.00	0 0.00 0.00 0.00	29 4.97
Higher	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR8: Why do you think this is?

The FREQ Procedure

Table of tr8 by atype				
tr8(Why specialty CFL sales would be different - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
A	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Don't Know	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Missing	181 30.99 34.61 74.79	45 7.71 8.60 100.00	297 50.86 56.79 100.00	523 89.55
Response Recorded	59 10.10 100.00 24.38	0 0.00 0.00 0.00	0 0.00 0.00 0.00	59 10.10
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR9: By what percentage do you estimate your stores sales of these specialty CFLs would be [TR7 higher/lower] during the 2006-2008 time period if program discounted CFL bulb were not available?

The MEANS Procedure

Analysis Variable : tr9 Percentage change in sales of CFLs if utility-discounted specialty CFLs were not available						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	23	42.0869565	26.6234911	3.0000000	95.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

TR16: Do your light bulb sales have seasonal cycles or fluctuate during the year? If so when?

The FREQ Procedure

Table of tr16 by atype				
tr16(Light bulbs sales fluctuate during the year)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	20 3.42 46.51 8.26	2 0.34 4.65 4.44	21 3.60 48.84 7.07	43 7.36
Refused	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Yes	105 17.98 49.30 43.39	18 3.08 8.45 40.00	90 15.41 42.25 30.30	213 36.47
No	116 19.86 35.47 47.93	25 4.28 7.65 55.56	186 31.85 56.88 62.63	327 55.99
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16a1_1: What type of light bulbs have seasonal cycles or fluctuating sales during the year? Standard ENERGY STAR CFLs

The FREQ Procedure

Table of tr16a1_1 by atype				
tr16a1_1(First fluctuation - Standard ENERGY STAR CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	137 23.46 36.93 56.61	27 4.62 7.28 60.00	207 35.45 55.80 69.70	371 63.53
Not Mentioned	9 1.54 40.91 3.72	1 0.17 4.55 2.22	12 2.05 54.55 4.04	22 3.77
Mentioned	96 16.44 50.26 39.67	17 2.91 8.90 37.78	78 13.36 40.84 26.26	191 32.71
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16a1_2: What type of light bulbs have seasonal cycles or fluctuating sales during the year? Specialty CFLs

The FREQ Procedure

Table of tr16a1_2 by atype				
tr16a1_2(First fluctuation - Specialty CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	137 23.46 36.93 56.61	27 4.62 7.28 60.00	207 35.45 55.80 69.70	371 63.53
Not Mentioned	57 9.76 50.89 23.55	9 1.54 8.04 20.00	46 7.88 41.07 15.49	112 19.18
Mentioned	48 8.22 47.52 19.83	9 1.54 8.91 20.00	44 7.53 43.56 14.81	101 17.29
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16a1_4: What type of light bulbs have seasonal cycles or fluctuating sales during the year? Incandescent bulbs

The FREQ Procedure

Table of tr16a1_4 by atype				
tr16a1_4(First fluctuation - Incandescents)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	137 23.46 36.93 56.61	27 4.62 7.28 60.00	207 35.45 55.80 69.70	371 63.53
Not Mentioned	36 6.16 45.00 14.88	8 1.37 10.00 17.78	36 6.16 45.00 12.12	80 13.70
Mentioned	69 11.82 51.88 28.51	10 1.71 7.52 22.22	54 9.25 40.60 18.18	133 22.77
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16b1: When do sales change?

The MEANS Procedure

Analysis Variable : tr16b1 When do sales change - open end						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	104	1.0000000	0	1.0000000	1.0000000
CA Non-Participant	45	18	1.0000000	0	1.0000000	1.0000000
Comparison Area	297	86	1.0000000	0	1.0000000	1.0000000

TR16c1: Approximately what was the percent change in your sales for this light bulb/these light bulbs?

The MEANS Procedure

Analysis Variable : tr16c1 First fluctuation - percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	82	32.1097561	54.5472965	-50.0000000	300.0000000
CA Non-Participant	45	14	18.8571429	23.6508486	-20.0000000	90.0000000
Comparison Area	297	67	27.8507463	38.9499499	-10.0000000	310.0000000

TR16d1: Were the changes positive or negative?

The FREQ Procedure

Table of tr16d1 by atype				
tr16d1(First fluctuation - positive or negative change in sales)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	5 0.86 55.56 2.07	0 0.00 0.00 0.00	4 0.68 44.44 1.35	9 1.54
Missing	137 23.46 36.93 56.61	27 4.62 7.28 60.00	207 35.45 55.80 69.70	371 63.53
Positive	95 16.27 48.97 39.26	16 2.74 8.25 35.56	83 14.21 42.78 27.95	194 33.22
Negative	5 0.86 50.00 2.07	2 0.34 20.00 4.44	3 0.51 30.00 1.01	10 1.71
Total	242 41.44	45 7.71	297 50.86	584 100.00

tr16x1: More changes

The FREQ Procedure

Table of tr16x1 by atype				
tr16x1(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	137 23.46 36.93 56.61	27 4.62 7.28 60.00	207 35.45 55.80 69.70	371 63.53
1	12 2.05 66.67 4.96	3 0.51 16.67 6.67	3 0.51 16.67 1.01	18 3.08
2	93 15.92 47.69 38.43	15 2.57 7.69 33.33	87 14.90 44.62 29.29	195 33.39
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16a2_1: What type of light bulbs have seasonal cycles or fluctuating sales during the year? Standard ENERGY STAR CFLs

The FREQ Procedure

Table of tr16a2_1 by atype				
tr16a2_1(Second fluctuation - Standard ENERGY STAR CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	230 39.38 40.64 95.04	42 7.19 7.42 93.33	294 50.34 51.94 98.99	566 96.92
Not Mentioned	2 0.34 40.00 0.83	1 0.17 20.00 2.22	2 0.34 40.00 0.67	5 0.86
Mentioned	10 1.71 76.92 4.13	2 0.34 15.38 4.44	1 0.17 7.69 0.34	13 2.23
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16a2_2: What type of light bulbs have seasonal cycles or fluctuating sales during the year? Specialty CFLs

The FREQ Procedure

Table of tr16a2_2 by atype				
tr16a2_2(Second fluctuation - Specialty CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	230 39.38 40.64 95.04	42 7.19 7.42 93.33	294 50.34 51.94 98.99	566 96.92
Not Mentioned	7 1.20 63.64 2.89	1 0.17 9.09 2.22	3 0.51 27.27 1.01	11 1.88
Mentioned	5 0.86 71.43 2.07	2 0.34 28.57 4.44	0 0.00 0.00 0.00	7 1.20
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16a2_4: What type of light bulbs have seasonal cycles or fluctuating sales during the year? Incandescent bulbs

The FREQ Procedure

Table of tr16a2_4 by atype				
tr16a2_4(Second fluctuation - Incandescents)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	230 39.38 40.64 95.04	42 7.19 7.42 93.33	294 50.34 51.94 98.99	566 96.92
Not Mentioned	3 0.51 75.00 1.24	0 0.00 0.00 0.00	1 0.17 25.00 0.34	4 0.68
Mentioned	9 1.54 64.29 3.72	3 0.51 21.43 6.67	2 0.34 14.29 0.67	14 2.40
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16b2: When do sales change?

The MEANS Procedure

Analysis Variable : tr16b2 When do sales change - open end						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	12	1.0000000	0	1.0000000	1.0000000
CA Non-Participant	45	3	1.0000000	0	1.0000000	1.0000000
Comparison Area	297	3	1.0000000	0	1.0000000	1.0000000

TR16c2: Approximately what was the percent change in your sales for this light bulb/these light bulbs?

The MEANS Procedure

Analysis Variable : tr16c2 Second fluctuation - percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	11	19.5454545	43.8437308	-50.0000000	100.0000000
CA Non-Participant	45	3	40.0000000	36.0555128	10.0000000	80.0000000
Comparison Area	297	1	30.0000000	.	30.0000000	30.0000000

TR16d2: Were the changes positive or negative?

The FREQ Procedure

Table of tr16d2 by atype				
tr16d2(Second fluctuation - positive or negative change in sales)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	230 39.38 40.64 95.04	42 7.19 7.42 93.33	294 50.34 51.94 98.99	566 96.92
Positive	8 1.37 61.54 3.31	3 0.51 23.08 6.67	2 0.34 15.38 0.67	13 2.23
Negative	4 0.68 80.00 1.65	0 0.00 0.00 0.00	1 0.17 20.00 0.34	5 0.86
Total	242 41.44	45 7.71	297 50.86	584 100.00

tr16x2: More changes

The FREQ Procedure

Table of tr16x2 by atype				
tr16x2(More changes)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	230 39.38 40.64 95.04	42 7.19 7.42 93.33	294 50.34 51.94 98.99	566 96.92
2	12 2.05 66.67 4.96	3 0.51 16.67 6.67	3 0.51 16.67 1.01	18 3.08
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16a3_1: What type of light bulbs have seasonal cycles or fluctuating sales during the year? Standard ENERGY STAR CFLs

The FREQ Procedure

Table of tr16a3_1 by atype				
tr16a3_1(Third fluctuation - Standard ENERGY STAR CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	242 41.44 41.44 100.00	45 7.71 7.71 100.00	297 50.86 50.86 100.00	584 100.00
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16a3_2: What type of light bulbs have seasonal cycles or fluctuating sales during the year? Specialty CFLs

The FREQ Procedure

Table of tr16a3_2 by atype				
tr16a3_2(Third fluctuation - Specialty CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	242 41.44 41.44 100.00	45 7.71 7.71 100.00	297 50.86 50.86 100.00	584 100.00
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16a3_4: What type of light bulbs have seasonal cycles or fluctuating sales during the year? Incandescent bulbs

The FREQ Procedure

Table of tr16a3_4 by atype				
tr16a3_4(Third fluctuation - Incandescents)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	242 41.44 41.44 100.00	45 7.71 7.71 100.00	297 50.86 50.86 100.00	584 100.00
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16b3: When do sales change?

The MEANS Procedure

Analysis Variable : tr16b3 When do sales change - open end						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

TR16c3: Approximately what was the percent change in your sales for this light bulb/these light bulbs?

The MEANS Procedure

Analysis Variable : tr16c3 Third fluctuation - percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

TR16d3: Were the changes positive or negative?

The FREQ Procedure

Table of tr16d3 by atype				
tr16d3(Third fluctuation -positive or negative change in sales)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	242 41.44 41.44 100.00	45 7.71 7.71 100.00	297 50.86 50.86 100.00	584 100.00
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16a4_1: What type of light bulbs have seasonal cycles or fluctuating sales during the year? Standard ENERGY STAR CFLs

The FREQ Procedure

Table of tr16a4_1 by atype				
tr16a4_1(Fourth fluctuation - Standard ENERGY STAR CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	242 41.44 41.44 100.00	45 7.71 7.71 100.00	297 50.86 50.86 100.00	584 100.00
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16a4_2: What type of light bulbs have seasonal cycles or fluctuating sales during the year? Specialty CFLs

The FREQ Procedure

Table of tr16a4_2 by atype				
tr16a4_2(Fourth fluctuation - Specialty CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	242 41.44 41.44 100.00	45 7.71 7.71 100.00	297 50.86 50.86 100.00	584 100.00
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16a4_4: What type of light bulbs have seasonal cycles or fluctuating sales during the year? Incandescent bulbs

The FREQ Procedure

Table of tr16a4_4 by atype				
tr16a4_4(Fourth fluctuation - Incandescents)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	242 41.44 41.44 100.00	45 7.71 7.71 100.00	297 50.86 50.86 100.00	584 100.00
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR16b4: When do sales change?

The MEANS Procedure

Analysis Variable : tr16b4 When do sales change - open end						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

TR16c4: Approximately what was the percent change in your sales for this light bulb/these light bulbs?

The MEANS Procedure

Analysis Variable : tr16c4 Fourth fluctuation - percent change						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

TR16d4: Were the changes positive or negative?

The FREQ Procedure

Table of tr16d4 by atype				
tr16d4(Fourth fluctuation -positive or negative change in sales)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	242 41.44 41.44 100.00	45 7.71 7.71 100.00	297 50.86 50.86 100.00	584 100.00
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR17a: In the last year what effect have each of the following had on your sales of ENERGY STAR light bulbs? If the effect was positive or negative approximately what was the % change in your sales? The economy

The FREQ Procedure

Table of tr17a by atype				
tr17a(Economy - effect on sales of ENERGY STAR light bulbs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	15 2.57 48.39 6.20	2 0.34 6.45 4.44	14 2.40 45.16 4.71	31 5.31
Refused	3 0.51 75.00 1.24	0 0.00 0.00 0.00	1 0.17 25.00 0.34	4 0.68
Positive	77 13.18 42.78 31.82	17 2.91 9.44 37.78	86 14.73 47.78 28.96	180 30.82
Negative	67 11.47 51.54 27.69	11 1.88 8.46 24.44	52 8.90 40.00 17.51	130 22.26
No effect	80 13.70 33.47 33.06	15 2.57 6.28 33.33	144 24.66 60.25 48.48	239 40.92
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR17a_1: Approximately what was the percent change in your sales?

The MEANS Procedure

Analysis Variable : tr17a_1 Percent change in sales due to economy						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	97	-1.6701031	28.8612780	-90.0000000	100.0000000
CA Non-Participant	45	18	13.3888889	20.9821742	-20.0000000	65.0000000
Comparison Area	297	96	7.5104167	24.9289495	-60.0000000	75.0000000

TR17b: In the last year what effect have each of the following had on your sales of ENERGY STAR light bulbs? If the effect was positive or negative approximately what was the % change in your sales? Higher energy prices

The FREQ Procedure

Table of tr17b by atype				
tr17b(Higher energy prices - effect on sales of ENERGY STAR light bulbs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	24 4.11 51.06 9.92	3 0.51 6.38 6.67	20 3.42 42.55 6.73	47 8.05
Refused	4 0.68 80.00 1.65	0 0.00 0.00 0.00	1 0.17 20.00 0.34	5 0.86
Positive	112 19.18 43.24 46.28	17 2.91 6.56 37.78	130 22.26 50.19 43.77	259 44.35
Negative	30 5.14 47.62 12.40	2 0.34 3.17 4.44	31 5.31 49.21 10.44	63 10.79
No effect	72 12.33 34.29 29.75	23 3.94 10.95 51.11	115 19.69 54.76 38.72	210 35.96
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR17b_1: Approximately what was the percent change in your sales?

The MEANS Procedure

Analysis Variable : tr17b_1 Percent change in sales due to higher energy prices						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	90	8.9222222	24.7332864	-75.0000000	100.0000000
CA Non-Participant	45	13	14.0769231	17.7551004	-35.0000000	35.0000000
Comparison Area	297	99	12.1616162	19.4352442	-30.0000000	70.0000000

TR17c: In the last year what effect have each of the following had on your sales of ENERGY STAR light bulbs? If the effect was positive or negative approximately what was the % change in your sales? New federal standards to improve the energy efficiency of light bulbs

The FREQ Procedure

Table of tr17c by atype				
tr17c(New federal standard to improve efficiency of light bulbs - effect on sales of ENERGY STAR light bulbs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	33 5.65 45.21 13.64	6 1.03 8.22 13.33	34 5.82 46.58 11.45	73 12.50
Refused	5 0.86 83.33 2.07	0 0.00 0.00 0.00	1 0.17 16.67 0.34	6 1.03
Positive	80 13.70 39.22 33.06	17 2.91 8.33 37.78	107 18.32 52.45 36.03	204 34.93
Negative	11 1.88 57.89 4.55	1 0.17 5.26 2.22	7 1.20 36.84 2.36	19 3.25
No effect	113 19.35 40.07 46.69	21 3.60 7.45 46.67	148 25.34 52.48 49.83	282 48.29
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR17c_1: Approximately what was the percent change in your sales?

The MEANS Procedure

Analysis Variable : tr17c_1 Percent change in sales due to new federal standard to improve efficiency of light bulbs						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	56	14.5000000	30.6582334	-80.0000000	100.0000000
CA Non-Participant	45	14	20.3571429	16.7589569	-20.0000000	50.0000000
Comparison Area	297	77	19.6753247	17.7151746	-15.0000000	80.0000000

TR17d: In the last year what effect have each of the following had on your sales of ENERGY STAR light bulbs? If the effect was positive or negative approximately what was the % change in your sales? State standards for lighting

The FREQ Procedure

Table of tr17d by atype				
tr17d(State standards for lighting - effect on sales of ENERGY STAR light bulbs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	43 7.36 46.74 17.77	6 1.03 6.52 13.33	43 7.36 46.74 14.48	92 15.75
Refused	5 0.86 100.00 2.07	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 0.86
Positive	64 10.96 52.89 26.45	13 2.23 10.74 28.89	44 7.53 36.36 14.81	121 20.72
Negative	9 1.54 69.23 3.72	0 0.00 0.00 0.00	4 0.68 30.77 1.35	13 2.23
No effect	121 20.72 34.28 50.00	26 4.45 7.37 57.78	206 35.27 58.36 69.36	353 60.45
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR17d_1: Approximately what was the percent change in your sales?

The MEANS Procedure

Analysis Variable : tr17d_1 Percent change in sales due to state standards for lighting						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	54	15.3703704	27.7198221	-80.0000000	100.0000000
CA Non-Participant	45	10	21.7000000	15.7059790	2.0000000	50.0000000
Comparison Area	297	34	20.6470588	18.5503122	-10.0000000	60.0000000

TR17e: In the last year what effect have each of the following had on your sales of ENERGY STAR light bulbs? If the effect was positive or negative approximately what was the % change in your sales? State level promotional activities

The FREQ Procedure

Table of tr17e by atype				
tr17e(State level promotional activities - effect on sales of ENERGY STAR light bulbs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	44 7.53 51.16 18.18	7 1.20 8.14 15.56	35 5.99 40.70 11.78	86 14.73
Refused	4 0.68 100.00 1.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.68
Positive	88 15.07 54.32 36.36	19 3.25 11.73 42.22	55 9.42 33.95 18.52	162 27.74
Negative	4 0.68 66.67 1.65	0 0.00 0.00 0.00	2 0.34 33.33 0.67	6 1.03
No effect	102 17.47 31.29 42.15	19 3.25 5.83 42.22	205 35.10 62.88 69.02	326 55.82
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR17e_1: Approximately what was the percent change in your sales?

The MEANS Procedure

Analysis Variable : tr17e_1 Percent change in sales due to state level promotional activities						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	63	26.3174603	43.8604184	-40.0000000	300.0000000
CA Non-Participant	45	12	22.5000000	17.1225529	5.0000000	50.0000000
Comparison Area	297	44	14.3181818	17.3322830	-50.0000000	50.0000000

TR17f: In the last year what effect have each of the following had on your sales of ENERGY STAR light bulbs? If the effect was positive or negative approximately what was the % change in your sales? Environmental concerns

The FREQ Procedure

Table of tr17f by atype				
tr17f(Environmental concerns - effect on sales of ENERGY STAR light bulbs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	22 3.77 57.89 9.09	3 0.51 7.89 6.67	13 2.23 34.21 4.38	38 6.51
Refused	4 0.68 100.00 1.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.68
Positive	101 17.29 42.26 41.74	22 3.77 9.21 48.89	116 19.86 48.54 39.06	239 40.92
Negative	18 3.08 48.65 7.44	2 0.34 5.41 4.44	17 2.91 45.95 5.72	37 6.34
No effect	97 16.61 36.47 40.08	18 3.08 6.77 40.00	151 25.86 56.77 50.84	266 45.55
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR17f_1: Approximately what was the percent change in your sales?

The MEANS Procedure

Analysis Variable : tr17f_1 Percent change in sales due to environmental concerns						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	76	13.7631579	30.9342824	-140.0000000	100.0000000
CA Non-Participant	45	19	14.5789474	15.9976241	-20.0000000	55.0000000
Comparison Area	297	96	18.8125000	21.9253818	-20.0000000	100.0000000

TR17g: In the last year what effect have each of the following had on your sales of ENERGY STAR light bulbs? If the effect was positive or negative approximately what was the % change in your sales? New or improved energy efficient lighting technologies

The FREQ Procedure

Table of tr17g by atype				
tr17g(New or improved energy efficient lighting technologies - effect on sales of ENERGY STAR light bulbs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	27 4.62 48.21 11.16	3 0.51 5.36 6.67	26 4.45 46.43 8.75	56 9.59
Refused	4 0.68 100.00 1.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.68
Positive	102 17.47 44.16 42.15	19 3.25 8.23 42.22	110 18.84 47.62 37.04	231 39.55
Negative	4 0.68 57.14 1.65	0 0.00 0.00 0.00	3 0.51 42.86 1.01	7 1.20
No effect	105 17.98 36.71 43.39	23 3.94 8.04 51.11	158 27.05 55.24 53.20	286 48.97
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR17g_1: Approximately what was the percent change in your sales?

The MEANS Procedure

Analysis Variable : tr17g_1 Percent change in sales due to new or improved energy efficient lighting technologies						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	65	21.6769231	24.9838121	-27.0000000	100.0000000
CA Non-Participant	45	14	17.0000000	11.0453610	2.0000000	40.0000000
Comparison Area	297	84	17.5000000	17.9366355	-10.0000000	80.0000000

TR17h: In the last year what effect have each of the following had on your sales of ENERGY STAR light bulbs? If the effect was positive or negative approximately what was the % change in your sales? The sales of competing retailers

The FREQ Procedure

Table of tr17h by atype				
tr17h(Sales of competing retailers - effect on sales of ENERGY STAR light bulbs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	39 6.68 45.88 16.12	7 1.20 8.24 15.56	39 6.68 45.88 13.13	85 14.55
Refused	4 0.68 57.14 1.65	0 0.00 0.00 0.00	3 0.51 42.86 1.01	7 1.20
Positive	32 5.48 34.04 13.22	11 1.88 11.70 24.44	51 8.73 54.26 17.17	94 16.10
Negative	25 4.28 44.64 10.33	4 0.68 7.14 8.89	27 4.62 48.21 9.09	56 9.59
No effect	142 24.32 41.52 58.68	23 3.94 6.73 51.11	177 30.31 51.75 59.60	342 58.56
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR17h_1: Approximately what was the percent change in your sales?

The MEANS Procedure

Analysis Variable : tr17h_1 Percent change in sales due to sales of competing retailers						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	38	-2.9736842	25.2773661	-50.0000000	45.0000000
CA Non-Participant	45	8	21.3750000	39.6518330	-30.0000000	100.0000000
Comparison Area	297	52	13.5384615	27.7315291	-75.0000000	80.0000000

TR17i: In the last year what effect have each of the following had on your sales of ENERGY STAR light bulbs? If the effect was positive or negative approximately what was the % change in your sales? The [UTILITY] Upstream Lighting Program

The FREQ Procedure

Table of tr17i by atype				
tr17i(The utility's Upstream Lighting Program-effect on sales of ENERGY STAR light bulbs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	20 3.42 100.00 8.26	0 0.00 0.00 0.00	0 0.00 0.00 0.00	20 3.42
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Refused	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
Positive	146 25.00 100.00 60.33	0 0.00 0.00 0.00	0 0.00 0.00 0.00	146 25.00
Negative	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
No effect	59 10.10 100.00 24.38	0 0.00 0.00 0.00	0 0.00 0.00 0.00	59 10.10
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR17i_1: Approximately what was the percent change in your sales?

The MEANS Procedure

Analysis Variable : tr17i_1 Percent change in sales due to the utility's Upstream Lighting Program						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	113	48.5663717	67.5713744	-40.0000000	500.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

TR18: Did you have an expectation that CFL sales would increase through your participation in the [UTILITY] program?

The FREQ Procedure

Table of tr18 by atype				
tr18(Expected that CFL sales would increase through participation in utility's program)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	9 1.54 100.00 3.72	0 0.00 0.00 0.00	0 0.00 0.00 0.00	9 1.54
Missing	21 3.60 5.79 8.68	45 7.71 12.40 100.00	297 50.86 81.82 100.00	363 62.16
Refused	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Skip Error	4 0.68 100.00 1.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.68
Yes	173 29.62 100.00 71.49	0 0.00 0.00 0.00	0 0.00 0.00 0.00	173 29.62
No	34 5.82 100.00 14.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	34 5.82
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR19: Has your expectation of increased sales through the program been met?

The FREQ Procedure

Table of tr19 by atype				
tr19(Expectation of increased sales has been met)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
Missing	65 11.13 15.97 26.86	45 7.71 11.06 100.00	297 50.86 72.97 100.00	407 69.69
Yes	143 24.49 100.00 59.09	0 0.00 0.00 0.00	0 0.00 0.00 0.00	143 24.49
No	31 5.31 100.00 12.81	0 0.00 0.00 0.00	0 0.00 0.00 0.00	31 5.31
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR20: Why do you say that?

The FREQ Procedure

Table of tr20 by atype				
tr20(Why expectation of sales have or have not been met - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Missing	68 11.64 16.59 28.10	45 7.71 10.98 100.00	297 50.86 72.44 100.00	410 70.21
Response Recorded	174 29.79 100.00 71.90	0 0.00 0.00 0.00	0 0.00 0.00 0.00	174 29.79
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR21: Can you estimate the percentage of customers who are buying CFLs for their own homes the percentage who are buying CFLs for their own businesses and the percentage who are builders or contractors buying them for construction or retrofit projects?

The FREQ Procedure

Table of tr21 by atype				
tr21(Can estimate percentage of customers buying for hom, business, or professional use?)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	37 6.34 30.33 15.29	8 1.37 6.56 17.78	77 13.18 63.11 25.93	122 20.89
Refused	1 0.17 33.33 0.41	0 0.00 0.00 0.00	2 0.34 66.67 0.67	3 0.51
Yes	172 29.45 43.11 71.07	32 5.48 8.02 71.11	195 33.39 48.87 65.66	399 68.32
No	32 5.48 53.33 13.22	5 0.86 8.33 11.11	23 3.94 38.33 7.74	60 10.27
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR21a1: Whats your percent estimate of this breakdown? customers buying CFLs for their own homes

The MEANS Procedure

Analysis Variable : tr21a1 Percent of customers buying for home use						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	169	79.3431953	23.3041605	2.0000000	100.0000000
CA Non-Participant	45	31	62.4193548	26.2637573	20.0000000	100.0000000
Comparison Area	297	184	67.2391304	24.3161641	0	100.0000000

TR21a2: Whats your percent estimate of this breakdown? customers buying CFLs for their own businesses

The MEANS Procedure

Analysis Variable : tr21a2 Percent of customers buying for business use						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	169	12.7928994	16.2674360	0	98.0000000
CA Non-Participant	45	31	20.6451613	15.3699889	0	50.0000000
Comparison Area	297	184	18.8369565	14.2074999	0	60.0000000

TR21a3: Whats your percent estimate of this breakdown? customers buying CFLs for construction/retrofit projects

The MEANS Procedure

Analysis Variable : tr21a3 Percent of customers buying for professional use (construction/retrofit)						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	169	7.8639053	13.2183742	0	75.0000000
CA Non-Participant	45	31	16.9354839	16.0560175	0	60.0000000
Comparison Area	297	184	12.9130435	15.9131194	0	100.0000000

TR21b: What information is this based on

The FREQ Procedure

Table of tr21b by atype				
tr21b(Information is based on what - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Missing	73 12.50 36.50 30.17	14 2.40 7.00 31.11	113 19.35 56.50 38.05	200 34.25
Response Recorded	168 28.77 43.86 69.42	31 5.31 8.09 68.89	184 31.51 48.04 61.95	383 65.58
Total	242 41.44	45 7.71	297 50.86	584 100.00

tr22: Average/Year

The FREQ Procedure

Table of tr22 by atype				
tr22(Estimation of total sales of all CFLs over course of month or year)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	135 23.12 40.66 55.79	27 4.62 8.13 60.00	170 29.11 51.20 57.24	332 56.85
Refused	4 0.68 40.00 1.65	0 0.00 0.00 0.00	6 1.03 60.00 2.02	10 1.71
Average month	79 13.53 39.70 32.64	18 3.08 9.05 40.00	102 17.47 51.26 34.34	199 34.08
Year	24 4.11 55.81 9.92	0 0.00 0.00 0.00	19 3.25 44.19 6.40	43 7.36
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR22a1: Considering data you might have available or your personal knowledge what would you estimate the total sales of all CFLs to be for your store over the course of a month or a year? Dollars/Month

The MEANS Procedure

Analysis Variable : tr22a1 Dollars per month						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	73	2389.52	5239.44	0	25000.00
CA Non-Participant	45	18	4655.56	9820.33	50.0000000	40000.00
Comparison Area	297	94	12412.68	48916.23	1.0000000	450000.00

TR22a2: Considering data you might have available or your personal knowledge what would you estimate the total sales of all CFLs to be for your store over the course of a month or a year? Units/Month

The MEANS Procedure

Analysis Variable : tr22a2 Units per month						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	6	560.3333333	1100.79	30.0000000	2800.00
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	7	177.0000000	182.5970062	12.0000000	550.0000000

TR22b1: Considering data you might have available or your personal knowledge what would you estimate the total sales of all CFLs to be for your store over the course of a month or a year? Dollars/Year

The MEANS Procedure

Analysis Variable : tr22b1 Dollars per year						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	23	21605.22	53621.56	220.0000000	240000.00
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	19	23339.63	57492.86	96.0000000	250000.00

TR22b2: Considering data you might have available or your personal knowledge what would you estimate the total sales of all CFLs to be for your store over the course of a month or a year? Units/Year

The MEANS Procedure

Analysis Variable : tr22b2 Units per year						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

tr23a: Dollars/Percent

The FREQ Procedure

Table of tr23a by atype				
tr23a(Pin based CFLs sold)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	13 2.23 31.71 5.37	4 0.68 9.76 8.89	24 4.11 58.54 8.08	41 7.02
Missing	139 23.80 40.64 57.44	27 4.62 7.89 60.00	176 30.14 51.46 59.26	342 58.56
Refused	4 0.68 66.67 1.65	0 0.00 0.00 0.00	2 0.34 33.33 0.67	6 1.03
Dollars	19 3.25 30.65 7.85	7 1.20 11.29 15.56	36 6.16 58.06 12.12	62 10.62
Percent	67 11.47 50.38 27.69	7 1.20 5.26 15.56	59 10.10 44.36 19.87	133 22.77
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR23a1: How would that total be broken down between screw-based CFLs and pin-based CFLs? Pin-based CFLs?

The MEANS Procedure

Analysis Variable : tr23a1 Pin based CFLs sold - dollars						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	19	184.2105263	558.0354010	0	2000.00
CA Non-Participant	45	7	2285.71	3860.67	0	10000.00
Comparison Area	297	36	588.8888889	1748.30	0	10000.00

TR23a2: How would that total be broken down between screw-based CFLs and pin-based CFLs? Pin-based CFLs?

The MEANS Procedure

Analysis Variable : tr23a2 Pin based CFLs sold - percent						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	67	11.0000000	16.6150717	0	75.0000000
CA Non-Participant	45	7	16.4285714	14.0577042	0	30.0000000
Comparison Area	297	59	17.2711864	18.3977421	0	80.0000000

tr23b: Dollars/Percent

The FREQ Procedure

Table of tr23b by atype				
tr23b(Screw based CFLs sold)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	10 1.71 28.57 4.13	4 0.68 11.43 8.89	21 3.60 60.00 7.07	35 5.99
Missing	139 23.80 40.64 57.44	27 4.62 7.89 60.00	176 30.14 51.46 59.26	342 58.56
Dollars	20 3.42 32.26 8.26	7 1.20 11.29 15.56	35 5.99 56.45 11.78	62 10.62
Percent	73 12.50 50.34 30.17	7 1.20 4.83 15.56	65 11.13 44.83 21.89	145 24.83
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR23b1: How would that total be broken down between screw-based CFLs and pin-based CFLs? Screw-based CFLs?

The MEANS Procedure

Analysis Variable : tr23b1 Screw based CFLs sold - dollars						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	20	2134.65	3052.52	0	12000.00
CA Non-Participant	45	7	6335.71	10998.21	50.0000000	30000.00
Comparison Area	297	35	4615.63	11515.23	20.0000000	65000.00

TR23b2: How would that total be broken down between screw-based CFLs and pin-based CFLs? Screw-based CFLs?

The MEANS Procedure

Analysis Variable : tr23b2 Screw based CFLs sold - percent						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	73	89.7671233	16.1516430	25.0000000	100.0000000
CA Non-Participant	45	7	83.5714286	14.0577042	70.0000000	100.0000000
Comparison Area	297	65	82.8000000	19.3448960	20.0000000	100.0000000

TR24: What is the source of your estimate?

The FREQ Procedure

Table of tr24 by atype				
tr24(Source of estimate - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	3 0.51 33.33 1.24	0 0.00 0.00 0.00	6 1.03 66.67 2.02	9 1.54
Missing	139 23.80 40.64 57.44	27 4.62 7.89 60.00	176 30.14 51.46 59.26	342 58.56
Response Recorded	100 17.12 42.92 41.32	18 3.08 7.73 40.00	115 19.69 49.36 38.72	233 39.90
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR25: What percent of your total CFL sales would you estimate are CFLs purchased through the [UTILITY] Upstream Lighting Program?

The MEANS Procedure

Analysis Variable : tr25 Percent of total CFL sales which are utility-discounted CFLs						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	180	73.0166667	31.9448678	0	100.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	0	.	.	.	.

tr26: Month/Year

The FREQ Procedure

Table of tr26 by atype				
tr26(Total sales of incandescents per month or year)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	100 17.12 34.72 41.32	28 4.79 9.72 62.22	160 27.40 55.56 53.87	288 49.32
Missing	39 6.68 100.00 16.12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	39 6.68
Refused	16 2.74 69.57 6.61	0 0.00 0.00 0.00	7 1.20 30.43 2.36	23 3.94
In Months	73 12.50 37.06 30.17	17 2.91 8.63 37.78	107 18.32 54.31 36.03	197 33.73
In Years	14 2.40 37.84 5.79	0 0.00 0.00 0.00	23 3.94 62.16 7.74	37 6.34
Total	242 41.44	45 7.71	297 50.86	584 100.00

TR26m1: What would you estimate is the total sales of incandescent bulbs for your store over the course of a month? Dollars/Month

The MEANS Procedure

Analysis Variable : tr26m1 Total sales of incandescents - dollars per month						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	71	660.0281690	1495.84	0	10000.00
CA Non-Participant	45	17	3224.41	7438.35	0	30000.00
Comparison Area	297	101	3170.89	7165.10	0	45000.00

TR26m2: What would you estimate is the total sales of incandescent bulbs for your store over the course of a month? Units/Month

The MEANS Procedure

Analysis Variable : tr26m2 Total sales of incandescents - units per month						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	2	29.0000000	26.8700577	10.0000000	48.0000000
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	7	1500.43	2785.03	25.0000000	7777.00

TR26y1: What would you estimate is the total sales of incandescent bulbs for your store over the course of a year? Dollars/Year

The MEANS Procedure

Analysis Variable : tr26y1 Total sales of incandescents - dollars per year						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	14	12184.57	34567.35	24.0000000	131000.00
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	21	40982.71	89191.61	0	300000.00

TR26y2: What would you estimate is the total sales of incandescent bulbs for your store over the course of a month? Units/Year

The MEANS Procedure

Analysis Variable : tr26y2 Total sales of incandescents - units per year						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	0	.	.	.	.
CA Non-Participant	45	0	.	.	.	.
Comparison Area	297	2	46.0000000	48.0832611	12.0000000	80.0000000

TR27: What is the source of your estimate?

The FREQ Procedure

Table of tr27 by atype				
tr27(Source of estimate - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 0.86 100.00 1.68	5 0.86
Missing	155 26.54 44.29 64.05	28 4.79 8.00 62.22	167 28.60 47.71 56.23	350 59.93
Refused	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17 100.00 0.34	1 0.17
Response Recorded	87 14.90 38.16 35.95	17 2.91 7.46 37.78	124 21.23 54.39 41.75	228 39.04
Total	242 41.44	45 7.71	297 50.86	584 100.00

PR1: Some retailers use something called keystone pricing where the retail price is set at twice the wholesale price. Is this how you determine the retail price for the [IF ST1 = 1 2 3 then insert discounted] CFLs you sell?

The FREQ Procedure

Table of pr1 by atype				
pr1(Determines retail price of CFLs by keystone pricing)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	42 7.19 22.83 17.36	18 3.08 9.78 40.00	124 21.23 67.39 41.75	184 31.51
Refused	4 0.68 40.00 1.65	1 0.17 10.00 2.22	5 0.86 50.00 1.68	10 1.71
Yes	35 5.99 59.32 14.46	7 1.20 11.86 15.56	17 2.91 28.81 5.72	59 10.10
No	161 27.57 48.64 66.53	19 3.25 5.74 42.22	151 25.86 45.62 50.84	331 56.68
Total	242 41.44	45 7.71	297 50.86	584 100.00

PR2: How do you determine the retail price for the [IF ST1 = 1 2 3 then insert [UTILITY]-discounted] CFLs you sell?

The FREQ Procedure

Table of pr2 by atype				
pr2(How retail price is determined for CFLs - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	6 1.03 31.58 2.48	1 0.17 5.26 2.22	12 2.05 63.16 4.04	19 3.25
Missing	81 13.87 32.02 33.47	26 4.45 10.28 57.78	146 25.00 57.71 49.16	253 43.32
Refused	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17 100.00 0.34	1 0.17
Response Recorded	155 26.54 49.84 64.05	18 3.08 5.79 40.00	138 23.63 44.37 46.46	311 53.25
Total	242 41.44	45 7.71	297 50.86	584 100.00

PR3: Some manufacturers participating in the Upstream Lighting Program have offered their products to certain retailers for free. Have you ever received [UTILITY]- discounted CFLs for free?

The FREQ Procedure

Table of pr3 by atype				
pr3(Received free utility CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	28 4.79 100.00 11.57	0 0.00 0.00 0.00	0 0.00 0.00 0.00	28 4.79
Missing	11 1.88 3.12 4.55	45 7.71 12.75 100.00	297 50.86 84.14 100.00	353 60.45
Refused	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Yes	146 25.00 100.00 60.33	0 0.00 0.00 0.00	0 0.00 0.00 0.00	146 25.00
No	56 9.59 100.00 23.14	0 0.00 0.00 0.00	0 0.00 0.00 0.00	56 9.59
Total	242 41.44	45 7.71	297 50.86	584 100.00

PR4: How do you determine the retail price for these free CFLs?

The FREQ Procedure

Table of pr4 by atype				
pr4(How retail price is determined for free CFLs - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	4 0.68 100.00 1.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.68
Missing	96 16.44 21.92 39.67	45 7.71 10.27 100.00	297 50.86 67.81 100.00	438 75.00
Response Recorded	142 24.32 100.00 58.68	0 0.00 0.00 0.00	0 0.00 0.00 0.00	142 24.32
Total	242 41.44	45 7.71	297 50.86	584 100.00

PR5: You said earlier that you sell standard ENERGY STAR CFLs that do not receive discounts from the [UTILITY] Program. Are the discounted CFLs typically lower-priced than other non-[UTILITY] discounted CFLs?

The FREQ Procedure

Table of pr5 by atype				
pr5(Utility-discounted CFLs are priced lower than non-discounted CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	9 1.54 100.00 3.72	0 0.00 0.00 0.00	0 0.00 0.00 0.00	9 1.54
Missing	110 18.84 24.34 45.45	45 7.71 9.96 100.00	297 50.86 65.71 100.00	452 77.40
Refused	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
Yes	93 15.92 100.00 38.43	0 0.00 0.00 0.00	0 0.00 0.00 0.00	93 15.92
No	27 4.62 100.00 11.16	0 0.00 0.00 0.00	0 0.00 0.00 0.00	27 4.62
Total	242 41.44	45 7.71	297 50.86	584 100.00

PR6: On a per-bulb basis on average how much lower are the [UTILITY]-discounted CFLs than the other CFLs that you sell?

The FREQ Procedure

Table of pr6 by atype				
pr6(Difference in price, utility discounted vs other CFLs - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
.	50 8.56 12.76 20.66	45 7.71 11.48 100.00	297 50.86 75.77 100.00	392 67.12
C	21 3.60 100.00 8.68	0 0.00 0.00 0.00	0 0.00 0.00 0.00	21 3.60
D	20 3.42 100.00 8.26	0 0.00 0.00 0.00	0 0.00 0.00 0.00	20 3.42
0	17 2.91 100.00 7.02	0 0.00 0.00 0.00	0 0.00 0.00 0.00	17 2.91
0.1	2 0.34 100.00 0.83	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.34
0.33	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
0.5	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
0.6	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17

PR6: On a per-bulb basis on average how much lower are the [UTILITY]-discounted CFLs than the other CFLs that you sell?

The FREQ Procedure

Table of pr6 by atype				
pr6(Difference in price, utility discounted vs other CFLs - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
0.75	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
0.8	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
0.99	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
1	16 2.74 100.00 6.61	0 0.00 0.00 0.00	0 0.00 0.00 0.00	16 2.74
1.25	2 0.34 100.00 0.83	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.34
1.5	6 1.03 100.00 2.48	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 1.03
2	12 2.05 100.00 4.96	0 0.00 0.00 0.00	0 0.00 0.00 0.00	12 2.05
2.5	2 0.34 100.00 0.83	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.34

PR6: On a per-bulb basis on average how much lower are the [UTILITY]-discounted CFLs than the other CFLs that you sell?

The FREQ Procedure

Table of pr6 by atype				
pr6(Difference in price, utility discounted vs other CFLs - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
3	27 4.62 100.00 11.16	0 0.00 0.00 0.00	0 0.00 0.00 0.00	27 4.62
4	14 2.40 100.00 5.79	0 0.00 0.00 0.00	0 0.00 0.00 0.00	14 2.40
4.21	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
4.3	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
4.5	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
5	2 0.34 100.00 0.83	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.34
5.75	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
6	2 0.34 100.00 0.83	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.34

PR6: On a per-bulb basis on average how much lower are the [UTILITY]-discounted CFLs than the other CFLs that you sell?

The FREQ Procedure

Table of pr6 by atype				
pr6(Difference in price, utility discounted vs other CFLs - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
6.75	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
7	3 0.51 100.00 1.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.51
7.5	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
9	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
10	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
98	30 5.14 100.00 12.40	0 0.00 0.00 0.00	0 0.00 0.00 0.00	30 5.14
Total	242 41.44	45 7.71	297 50.86	584 100.00

PR7: Have the reduced prices of discounted bulbs impacted the sale of other compact fluorescent bulbs in your store?

The FREQ Procedure

Table of pr7 by atype				
pr7(Reduced prices of utility-discounted bulbs have affected sale of other CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	28 4.79 100.00 11.57	0 0.00 0.00 0.00	0 0.00 0.00 0.00	28 4.79
Missing	50 8.56 12.76 20.66	45 7.71 11.48 100.00	297 50.86 75.77 100.00	392 67.12
Refused	9 1.54 100.00 3.72	0 0.00 0.00 0.00	0 0.00 0.00 0.00	9 1.54
Yes	94 16.10 100.00 38.84	0 0.00 0.00 0.00	0 0.00 0.00 0.00	94 16.10
No	61 10.45 100.00 25.21	0 0.00 0.00 0.00	0 0.00 0.00 0.00	61 10.45
Total	242 41.44	45 7.71	297 50.86	584 100.00

PR8: How has it impacted the sale of other CFLs?

The FREQ Procedure

Table of pr8 by atype				
pr8(Impact of sales of other CFLs - open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Missing	148 25.34 30.20 61.16	45 7.71 9.18 100.00	297 50.86 60.61 100.00	490 83.90
Response Recorded	93 15.92 100.00 38.43	0 0.00 0.00 0.00	0 0.00 0.00 0.00	93 15.92
Total	242 41.44	45 7.71	297 50.86	584 100.00

PO1: Does your store partake in any independent marketing or promoting of ENERGY STAR light bulbs [IF ST1 =1 2 3 then insert without [UTILITY] Upstream Lighting Program involvement]?

The FREQ Procedure

Table of po1 by atype				
po1(Store partakes in independent marketing or promoting of ENERGY STAR light bulbs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	10 1.71 40.00 4.13	2 0.34 8.00 4.44	13 2.23 52.00 4.38	25 4.28
Refused	1 0.17 16.67 0.41	0 0.00 0.00 0.00	5 0.86 83.33 1.68	6 1.03
Yes	60 10.27 31.41 24.79	16 2.74 8.38 35.56	115 19.69 60.21 38.72	191 32.71
No	171 29.28 47.24 70.66	27 4.62 7.46 60.00	164 28.08 45.30 55.22	362 61.99
Total	242 41.44	45 7.71	297 50.86	584 100.00

PO2: What independent marketing or promoting do you do?

The FREQ Procedure

Table of po2 by atype				
po2(Independent marketing or promoting- open end)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.34 100.00 0.67	2 0.34
Missing	182 31.16 46.31 75.21	29 4.97 7.38 64.44	182 31.16 46.31 61.28	393 67.29
Response Recorded	60 10.27 31.75 24.79	16 2.74 8.47 35.56	113 19.35 59.79 38.05	189 32.36
Total	242 41.44	45 7.71	297 50.86	584 100.00

PO3: How often do you do this? Would you say it was always very often sometimes or not very often?

The FREQ Procedure

Table of po3 by atype				
po3(Frequency of marketing or promoting)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17 100.00 0.34	1 0.17
Missing	182 31.16 46.31 75.21	29 4.97 7.38 64.44	182 31.16 46.31 61.28	393 67.29
Always	21 3.60 31.34 8.68	6 1.03 8.96 13.33	40 6.85 59.70 13.47	67 11.47
Very Often	11 1.88 24.44 4.55	6 1.03 13.33 13.33	28 4.79 62.22 9.43	45 7.71
Sometimes	20 3.42 39.22 8.26	3 0.51 5.88 6.67	28 4.79 54.90 9.43	51 8.73
Not Very Often	8 1.37 29.63 3.31	1 0.17 3.70 2.22	18 3.08 66.67 6.06	27 4.62
Total	242 41.44	45 7.71	297 50.86	584 100.00

PO4: When your store and/or the sponsors are promoting ENERGY STAR lighting do your sales of these ***products…?***

The FREQ Procedure

Table of po4 by atype				
po4(Change in sales during marketing or promotions)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 1.03 100.00 2.02	6 1.03
Missing	182 31.16 46.31 75.21	29 4.97 7.38 64.44	182 31.16 46.31 61.28	393 67.29
Increase	42 7.19 29.79 17.36	15 2.57 10.64 33.33	84 14.38 59.57 28.28	141 24.14
Stay the Same	17 2.91 41.46 7.02	1 0.17 2.44 2.22	23 3.94 56.10 7.74	41 7.02
Decrease	1 0.17 33.33 0.41	0 0.00 0.00 0.00	2 0.34 66.67 0.67	3 0.51
Total	242 41.44	45 7.71	297 50.86	584 100.00

PO5: (If increase or decrease) By how much - as a percentage of sales?

The MEANS Procedure

Analysis Variable : po5 Percent change in sales during marketing or promotions						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	30	60.6666667	99.8855667	10.0000000	500.0000000
CA Non-Participant	45	12	21.2500000	12.6356278	5.0000000	50.0000000
Comparison Area	297	69	19.6376812	14.2209156	2.0000000	55.0000000

F1: Would you consider this store independently-owned a franchise or part of a corporation?

The FREQ Procedure

Table of f1 by atype				
f1(Ownership status of store)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	3 0.51 50.00 1.24	0 0.00 0.00 0.00	3 0.51 50.00 1.01	6 1.03
Refused	2 0.34 50.00 0.83	0 0.00 0.00 0.00	2 0.34 50.00 0.67	4 0.68
Independently-owned	137 23.46 73.26 56.61	6 1.03 3.21 13.33	44 7.53 23.53 14.81	187 32.02
Franchise	4 0.68 28.57 1.65	0 0.00 0.00 0.00	10 1.71 71.43 3.37	14 2.40
Corporate Owned	95 16.27 25.68 39.26	39 6.68 10.54 86.67	236 40.41 63.78 79.46	370 63.36
Other	1 0.17 33.33 0.41	0 0.00 0.00 0.00	2 0.34 66.67 0.67	3 0.51
Total	242 41.44	45 7.71	297 50.86	584 100.00

F2: What is the square footage (of the stores sales area)?

The MEANS Procedure

Analysis Variable : f2 Square footage of store						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	201	27934.23	41130.24	600.0000000	180000.00
CA Non-Participant	45	19	73644.58	68792.32	100.0000000	200000.00
Comparison Area	297	176	59922.65	64092.06	120.0000000	300000.00

F3: How many employees work at this particular store location?

The MEANS Procedure

Analysis Variable : f3 Number of people employed at store						
atype	N Obs	N	Mean	Std Dev	Minimum	Maximum
CA Participant	242	230	61.5956522	89.8567369	0	480.0000000
CA Non-Participant	45	38	122.6842105	101.8961064	2.0000000	400.0000000
Comparison Area	297	269	126.4981413	127.0123576	1.0000000	600.0000000

F4: Which category would you place your store? Is it a (READ RESPONSES)

The FREQ Procedure

Table of f4 by atype				
f4(Type of store)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Mass Merchandiser	23 3.94 19.83 9.50	17 2.91 14.66 37.78	76 13.01 65.52 25.59	116 19.86
Discount Store	23 3.94 29.87 9.50	5 0.86 6.49 11.11	49 8.39 63.64 16.50	77 13.18
Large Home Improvement	24 4.11 21.05 9.92	9 1.54 7.89 20.00	81 13.87 71.05 27.27	114 19.52
Hardware	46 7.88 61.33 19.01	3 0.51 4.00 6.67	26 4.45 34.67 8.75	75 12.84
Grocery	108 18.49 70.13 44.63	3 0.51 1.95 6.67	43 7.36 27.92 14.48	154 26.37
Drug	10 1.71 62.50 4.13	6 1.03 37.50 13.33	0 0.00 0.00 0.00	16 2.74
Membership Club	8 1.37 25.00 3.31	2 0.34 6.25 4.44	22 3.77 68.75 7.41	32 5.48
Total	242 41.44	45 7.71	297 50.86	584 100.00

F6: How many years has your store been selling CFLs?

The FREQ Procedure

Table of f6 by atype				
f6(Number of years store has been selling CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
Don't Know	30 5.14 100.00 12.40	0 0.00 0.00 0.00	0 0.00 0.00 0.00	30 5.14
Missing	20 3.42 5.52 8.26	45 7.71 12.43 100.00	297 50.86 82.04 100.00	362 61.99
Refused	1 0.17 100.00 0.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.17
Skip Error	4 0.68 100.00 1.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.68
One	10 1.71 100.00 4.13	0 0.00 0.00 0.00	0 0.00 0.00 0.00	10 1.71
Two	31 5.31 100.00 12.81	0 0.00 0.00 0.00	0 0.00 0.00 0.00	31 5.31
Three	49 8.39 100.00 20.25	0 0.00 0.00 0.00	0 0.00 0.00 0.00	49 8.39
Four	26 4.45 100.00 10.74	0 0.00 0.00 0.00	0 0.00 0.00 0.00	26 4.45
Five	27 4.62 100.00 11.16	0 0.00 0.00 0.00	0 0.00 0.00 0.00	27 4.62

F6: How many years has your store been selling CFLs?

The FREQ Procedure

Table of f6 by atype				
f6(Number of years store has been selling CFLs)	atype			
Frequency Percent Row Pct Col Pct	CA Participant	CA Non-Participant	Comparison Area	Total
More than five	44 7.53 100.00 18.18	0 0.00 0.00 0.00	0 0.00 0.00 0.00	44 7.53
Total	242 41.44	45 7.71	297 50.86	584 100.00

Appendix J

Hedonic Pricing Model

Appendix J: Hedonic Pricing Model

TASK SUMMARY

Our main empirical strategy for answering the research questions about CFL pricing was to estimate a hedonic pricing model in which the price of a product is regressed on the product's characteristics.[1] The idea behind the hedonic pricing model is that variation in the price of a product can be explained by the observable attributes of the product. In the model, the coefficient corresponding to an attribute represents the "latent price" of the untraded attribute. The hedonic pricing model therefore allows one to recover prices or values of attributes or goods that are not observed.

The CFL pricing model used in this study followed the basic hedonic formulation (bolded type indicates vectors):

$$\text{Register price per bulb} = \beta_0 + \beta_1 \text{ Discount IOU} + \beta_2 \text{Discount Other} + \beta_3 \mathbf{Product\ Characteristics} + \beta_4 \mathbf{Retail\ Channel} + \beta_5 \mathbf{MetroArea} + \beta_6 \mathbf{MonthYear} + \varepsilon$$

The dependent variable was the price per bulb in the package. The independent variables were the characteristics of the CFL (watts and Energy Star label [1 = "Yes," 0 = "No"]), the number of bulbs in the package, manufacturer fixed effects, metropolitan statistical area fixed effects, and year-month fixed effects.

We allowed the impact of the number of CFLs in the package on price per bulb to vary non-parametrically (i.e., without making functional form assumptions) with the number of bulbs in the package. This was done by including separate indicator variables for the number of CFLs in the package.[2] In addition, the right hand side variables included indicator variables for whether the package was discounted by an IOU (1 = "Yes," 0 = "No") or discounted by another entity such as the retailer (1 = "Yes," 0 = "No").

We expect both variables to have negative and statistically significant effects on register price, but the magnitudes of the coefficients are *a priori* unclear. Neo-classical economic theory would predict that the impact of upstream incentive on register price depends on the elasticity of supply and demand of CFLs and should be between 0 and 100% of the incentive amount. However, anecdotal evidence based on interviews with suppliers suggests that the impact of the incentive could exceed the incentive amount.

To test several of the hypotheses, it was necessary to augment the main regression equation with additional independent variables. For example, to test the hypothesis about variation between sales channels in an upstream rebate's impact on register price, we introduced interaction terms

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[1] See Malpezzi, Stephen (2002). "Hedonic Pricing Models: A Selective and Applied Review." In Housing Economics: Essays in Honor of Duncan Maclennan. Also, Sheppard, Stephen (1999). Hedonic Analysis of Housing Markets. In Paul C. Chesire and Edwin S. Mills (eds.), Handbook of Regional and Urban Economics, v3. Elsevier.

[2] Not making assumptions about the relationship between price per bulb and the number of bulbs is important because the relationship is a major source of uncertainty in our model. Making parametric assumptions (e.g., that the relationship between price per bulb and the number of bulbs was linear) would introduce additional error in and reduce the statistical precision of the model.

between Discount IOU and the sales channel variables into the model. Table J-1 lists the primary and secondary research hypotheses and how the hypotheses were tested.

Table J- 1. Research Hypotheses

Research Hypotheses	Market Effects Question	Estimation Strategy
Primary		
Do upstream utility-sponsored incentives reduce the register price of utility sponsored CFLs in California?	No	Examine sign and statistical significance of coefficient on IOU Discount variable in baseline regression. IOU Discount should have a negative coefficient.
What fraction of incentives is passed on to consumers in the form of lower retail prices? Is there a "multiplier effect"?	Yes	Examine sign, statistical significance, and magnitude of coefficient on IOU Discount variable in baseline regression and compare to average incentive paid by IOU to upstream sellers.
Secondary		
Does the impact of upstream utility-sponsored incentives vary by utility service territory?	No	Include interaction terms between IOU discount and utility service territory.
Does the impact of upstream utility-sponsored incentives vary by sales channel?	No	Include interaction terms between IOU discount and sales channel.
Have upstream utility-sponsored incentives resulted in greater non-utility discounts?	Yes	Include interaction term between Discount Other and dummy variable for California. Coefficient should be negative and statistically significant if California utility rebates increased other discounts.
Have upstream utility-sponsored incentives resulted in lower prices for non-discounted bulbs?	Yes	Examine sign and statistical significance of coefficient on dummy variable for California. Coefficient should be negative and statistically significant if California utility rebates increased other discounts.

We began by estimating a very parsimonious specification (Model 1 in J- 2 below) that included just the IOU Discount and Discount Other variables, Energy Star label, watts, and package quantity variables. In models 2 through 5, we progressively added dummy variables for manufacturer (Feit Electric, General Electric, N Vision, Sylvania), sales channel (Discount, Grocery, Hardware, Home Improvement, Mass Merchandise/Club)[3], metro area[4], and month-year.

[3] The omitted sales channel category is drug store.

[4] The omitted metro area category is a store in Colusa County, California or one of the following metro areas in California: Chico, Hanford-Corcoran, Salinas, San Luis Obispo-Paso Robles, Vallejo-Fairfied. There were not enough observations for each of these areas to estimate their effects separately.

The addition of manufacturer fixed effects in Model 2 significantly reduces the estimate of the impact of the IOU Discount. However, after adding controls for manufacturer, the estimate of the impact of IOU Discount on register price per bulb is robust to the inclusion of additional controls.

Table J-2 shows there is little difference between Model 2 and models 3 through 5 in the impact of an upstream incentive. However, because it is most comprehensive, Model 5 is our preferred specification.

Table J- 2. Hedonic Pricing Regression Model Results

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7	MODEL 8
Intercept	4.477	3.926	4.068	3.879	3.300	3.520	3.546	3.388
	(54.48)	(45.07)	(36.63)	(27.45)	(13.61)	(14.19)	(13.63)	(14.77)
Discount Other (1='Yes', 0='No')	-0.932	-0.987	-0.977	-0.992	-0.972	-0.952	-0.964	-1.241
	(14.99)	(16.45)	(16.08)	(16.16)	(15.80)	(15.44)	(12.63)	(10.85)
IOU Discount (1='Yes', 0='No')	-3.148	-2.826	-2.706	-2.726	-2.697	-3.643	-2.922	-2.633
	(44.23)	(40.17)	(38.00)	(37.48)	(36.63)	(13.95)	(27.69)	(35.57)
Quantity_2	-1.349	-1.497	-1.476	-1.470	-1.457	-1.466	-1.264	-1.465
	(26.48)	(30.17)	(29.25)	(29.17)	(29.05)	(29.14)	(18.54)	(29.13)
Quantity_3	-2.325	-2.756	-2.767	-2.734	-2.719	-2.735	-2.377	-2.757
	(33.61)	(39.98)	(39.71)	(39.11)	(39.10)	(39.31)	(26.74)	(39.76)
Quantity_4	-2.966	-2.571	-2.589	-2.595	-2.580	-2.590	-2.422	-2.570
	(49.22)	(43.02)	(42.73)	(42.92)	(42.91)	(42.84)	(32.58)	(42.67)
Quantity_5	-2.388	-2.846	-2.902	-2.894	-2.919	-2.929	-2.850	-2.917
	(14.47)	(17.83)	(18.20)	(18.19)	(18.45)	(18.55)	(13.34)	(18.40)
Quantity_6	-3.217	-3.475	-3.441	-3.405	-3.393	-3.401	-3.020	-3.428
	(38.82)	(43.24)	(41.24)	(40.84)	(40.96)	(41.11)	(26.01)	(41.35)
Quantity_7plus	-3.357	-3.494	-3.507	-3.510	-3.503	-3.503	-3.251	-3.501
	(24.49)	(26.46)	(26.50)	(26.51)	(26.61)	(26.67)	(17.79)	(26.61)
Energy Star Label (1='Yes', 0='No')	-0.522	-0.707	-0.669	-0.685	-0.676	-0.676	-0.837	-0.660
	(9.40)	(13.11)	(12.23)	(12.27)	(12.09)	(12.10)	(9.14)	(11.97)
Watts	0.078	0.080	0.080	0.080	0.080	0.081	0.071	0.081
	(22.16)	(23.75)	(23.95)	(23.91)	(24.34)	(24.54)	(16.15)	(24.47)
FEIT ELECTRIC		0.907	0.826	0.844	0.800	0.758		0.809
		(12.46)	(11.04)	(11.13)	(10.45)	(9.85)		(10.64)
GENERAL ELECTRIC		1.159	1.214	1.180	1.178	1.148		1.230
		(20.92)	(20.23)	(19.49)	(19.40)	(18.69)		(20.33)
N VISION		0.321	0.161	0.157	0.137	0.124		0.168
		(5.64)	(2.55)	(2.34)	(2.04)	(1.85)		(2.58)
SYLVANIA		1.437	1.486	1.519	1.485	1.436		1.475
		(18.98)	(19.58)	(19.88)	(19.37)	(18.48)		(19.31)
DISCOUNT STORE			-0.892	-0.869	-0.952	-0.973		-0.971
			(8.09)	(7.75)	(8.41)	(7.61)		(8.69)

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7	MODEL 8
GROCERY STORE			-0.285	-0.232	-0.245	-0.377		-0.279
			(3.25)	(2.58)	(2.59)	(3.83)		(2.99)
HARDWARE STORE			-0.088	-0.124	-0.152	-0.180		-0.113
			(1.07)	(1.49)	(1.80)	(2.05)		(1.36)
HOME IMPROVEMENT STORE			-0.013	0.009	-0.029	-0.133		-0.056
			(0.16)	(0.11)	(0.34)	(1.52)		(0.68)
MASS MERCHANDISE/ MEMBER CLUB STORE			-0.288	-0.244	-0.315	-0.375		-0.353
			(3.74)	(3.08)	(3.86)	(4.46)		(4.40)
Atlanta				-0.050	-0.217	-0.231		
				(0.44)	(1.66)	(1.77)		
Fresno				0.323	0.291	0.270		
				(2.70)	(2.30)	(2.14)		
Kansas City				0.275	0.058	0.038		
				(2.42)	(0.44)	(0.29)		
Lawrence				0.124	-0.057	-0.060		
				(0.56)	(0.25)	(0.26)		
Los Angeles				0.206	0.216	0.186		
				(2.11)	(2.17)	(1.86)		
Oxnard				0.185	0.077	0.033		
				(1.20)	(0.48)	(0.20)		
Philadelphia				0.272	0.039	0.023		
				(2.47)	(0.30)	(0.18)		
Pittsburgh				0.142	-0.177	-0.181		
				(1.04)	(1.11)	(1.14)		
Riverside				-0.220	-0.231	-0.214		
				(1.51)	(1.55)	(1.44)		
Sacramento				0.118	0.059	0.058		
				(0.53)	(0.26)	(0.26)		
San Diego				-0.004	-0.067	-0.072		
				(0.03)	(0.63)	(0.69)		
San Francisco				0.382	0.386	0.346		
				(3.60)	(3.53)	(3.16)		
San Jose				0.273	0.247	0.238		
				(2.35)	(1.91)	(1.85)		
Santa Cruz				0.043	-0.013	-0.037		
				(0.23)	(0.07)	(0.19)		
Santa Rosa				0.238	0.121	0.068		
				(1.05)	(0.52)	(0.29)		
Savannah				0.451	0.282	0.269		
				(3.22)	(1.84)	(1.75)		

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7	MODEL 8
Stockton				0.716	0.624	0.612		
				(4.22)	(3.65)	(3.58)		
Topeka				0.352	-0.061	-0.076		
				(1.89)	(0.27)	(0.33)		
Wichita				0.181	0.012	-0.010		
				(1.27)	(0.08)	(0.06)		
Yuba City				0.073	-0.017	-0.035		
				(0.27)	(0.06)	(0.13)		
MAR 2008					0.852	0.739	0.696	0.878
					(4.00)	(3.35)	(3.32)	(4.18)
APR 2008					0.463	0.365	0.231	0.418
					(2.06)	(1.58)	(1.04)	(1.91)
MAY 2008					0.256	0.134	0.082	0.220
					(1.20)	(0.60)	(0.39)	(1.05)
JUN 2008					0.561	0.450	0.330	0.518
					(2.74)	(2.13)	(1.64)	(2.55)
AUG 2008					1.770	1.601	1.390	1.756
					(5.65)	(5.02)	(4.50)	(5.59)
SEP 2008					0.690	0.564	0.453	0.567
					(3.41)	(2.69)	(2.25)	(2.89)
OCT 2008					0.589	0.462	0.364	0.424
					(2.88)	(2.19)	(1.79)	(2.13)
NOV 2008					0.593	0.470	0.351	0.420
					(2.92)	(2.25)	(1.74)	(2.13)
DEC 2008					-0.459	-0.613	-0.766	-0.419
					(1.63)	(2.14)	(2.73)	(1.49)
MAR 2009					1.029	0.910		0.910
					(4.33)	(3.74)		(4.13)
APR 2009					0.770	0.667		0.678
					(3.74)	(3.15)		(3.39)
MAY 2009					0.935	0.826		0.832
					(4.17)	(3.58)		(3.87)
IOU Discount* Discount Store						0.785		
						(2.46)		
IOU Discount* Grocery Store						1.391		
						(4.54)		
IOU Discount* Hardware Store						0.646		
						(2.13)		
IOU Discount* Home Improvement Store						1.401		
						(4.62)		

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7	MODEL 8
IOU Discount* Mass Merchandise /Club Store						0.828		
						(2.78)		
California (1='Yes', 0='No')								0.133
								(1.97)
Discount Other*California								0.394
								(2.97)
IOU Discount *SDGE							0.560	
							(2.80)	
IOU Discount*SCE							0.713	
							(4.90)	
ADJUSTED R2	0.532	0.574	0.580	0.584	0.590	0.592	0.622	0.587
N	6,234	6,234	6,234	6,234	6,234	6,234	3,468	6,234
Notes: Dependent variable in all models is price per bulb. Absolute value of t statistic in parentheses. All models estimated by OLS.								

Appendix K

Multi-State Attribution Analysis—Regression Model and Results

RESULTS OF THE MULTISTATE CFL MODELING EFFORT

February 3, 2010

Submitted to:

California Public Utilities Commission

Submitted by:

NMR Group, Inc.
The Cadmus Group

Contents

Tables

Figures

Executive Summary

This report summarizes the analyses conducted in support of the multistate CFL modeling effort, highlighting the results as they pertain to the market effects analysis for the California Upstream Lighting Program (ULP). The Sponsors of this study include the following: California Public Utilities Commission (CPUC), New York State Energy Research and Development Authority (NYSERDA), Wisconsin Public Service Commission (WPSC), Consumers Energy in Michigan (CE), the Connecticut Energy Conservation Management Board (ECMB), Connecticut Light and Power (CL&P), Northeast Utilities (NU), The United Illuminating Company (UI), the Cape Light Compact (Cape Light), NSTAR, National Grid, Unitil, Western Massachusetts Electric (WMECO), and Xcel Energy in Colorado (Xcel). This report draws on data from 16 different geographical areas in the United States, but was written specifically for the CPUC. The analyses draw on telephone surveys of nearly 9,300 households and onsite saturation surveys (including confirmation of when CFLs were purchases) for about 1,400 households. Note that the report uses the term "sponsors" because the various parties supporting this effort include electric utilities, energy service organizations, public service commissions, and state agencies.

The goal of the analysis was to identify the total net program effects—net of free ridership and spillover—resulting from CFL program activity. The California Evaluation Protocols, however, only allow for the inclusion of free ridership, and not spillover, when calculating net-to-gross (NTG). While the ultimate goal of this report is to examine market effects (i.e., spillover), this statistical approach does not disaggregate these various effects. The Residential Retrofit Team, however, has presented an estimate of program free ridership and NTG that excludes spillover in the ULP evaluation report. The analysis presented here, therefore, refers to the total net impact rather than the NTG.

The key result emerging from the preliminary analysis of the models is that CFL programs had positive effects on CFL purchases in 2008 as well as on current CFL use and saturation. This executive summary provides an overview of the approach, methods, and findings that have led to this conclusion. It also describes the final steps to be taken in this multistate modeling effort that will likely improve our understanding of CFL program effects in the current and changing CFL market.

Study Background

Methods of estimating the net impact of CFL programs have evolved over time to account for free ridership and spillover, adoption of upstream programs, and changes in the CFL market. Recently, Sponsors in various areas have turned to a "non-program comparison state" approach to estimate market effects, but rapid expansion of CFL programs and recent changes in the CFL market have hindered the ability of this approach to provide reliable estimates of the net program impact.

The principal goals of the statistical analyses presented in this draft report are to identify and examine factors associated with 2008 CFL purchases generally and the effect of CFL programs on those purchases specifically in this changing CFL market. The Multistate Regression Team (a subset of the CFL Markets Team, hereafter referred to as the "MR Team") uses the modeling results to estimate the total net impact for each Sponsor.[1] The MR Team bases these estimates on the models that we believe best describe CFL purchases in 2008.

Areas Included in the Analyses

The multistate modeling effort relies on data drawn from telephone and onsite surveys conducted in areas with longstanding CFL programs, those with newer or smaller programs, and those with no CFL programs through. The Sponsors of this effort collectively account for the following areas:

- California (CA): areas served by Pacific Gas and Electric (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE) or collectively the investor owned utilities (IOUs) service territory
- Colorado (CO): the area served by Xcel Energy
- Connecticut (CT): the entire state
- Massachusetts (MA): the entire state
- Michigan (MI): the area served by Consumers Energy (CE) only
- New York State (less New York City and Nassau and Suffolk Counties, NYS) and New York City (NYC): Surveyed separately due to the demographic and economic differences between the two regions; the Long Island Power Authority was not a study sponsor
- Wisconsin (WI): the entire state

The Sponsors and their respective evaluation teams selected comparison areas that, to the extent possible, shared demographic characteristics similar to their own. Furthermore, they sought comparison areas with no CFL programs or relatively small or newer ones.[2] The Sponsors variously funded the fielding of data collection in the following states:

- Georgia (GA), Kansas (KS), and Pennsylvania (PA): funded by the CPUC, who chose three combined states because no one non-program state was similar to the IOU service territories. Together with California, we refer to these as the "CPUC states"

[1] Members on the MR Team also serve on the evaluation teams for at least some of the other Sponsors of the multistate effort. When discussing sampling and data collection, we refer to the evaluation teams for individual Sponsors. The MR Team is the subset of evaluators focusing on the regression analyses presented in this report.

[2] For example, Georgia Power included information about CFLs on its Web page, but did not offer an incentive program for CFLs. As noted in the CFL Market Effects Interim Report (May 15, 2009), however, removing Georgia from the analysis had no impact on the conclusions.

- The District of Columbia (DC) and Houston: funded by NYSERDA, who chose two comparison areas because no one non-program city or county resembled New York City
- Ohio (OH): funded by NYSERDA as a comparison to New York State; the NYSERDA evaluation team excluded the 513/283 area code which overlaps heavily with the Duke Energy service territory because the utility had an active CFL program there in 2008
- Maryland (MD): funded by the Sponsors of the Massachusetts ENERGY STAR® Lighting Program as a comparison to Massachusetts. The Maryland electric utilities launched CFL programs in late 2007 and expanded them in 2008; therefore, it represents a substantial but new program area in our model
- Indiana (IN): funded by the WPSC as a comparison area for Wisconsin

Telephone and Onsite Surveys: Comparability across Areas

The Sponsors and their evaluation teams collectively fielded seven telephone surveys and seven onsite surveys in sixteen areas, with some questions tailored to either program or non-program respondents. To achieve comparability on the key issues explored in the multistate modeling effort, each telephone survey instrument included a core set of questions about awareness, familiarity, satisfaction, use, and purchases, as well as a standard suite of demographic questions. Likewise, each onsite survey followed similar procedures to identify CFLs, perform socket counts, and ascertain when CFLs were obtained by the household.

While each Sponsor was interested in gathering information to develop an estimate of net program impact, most also had additional issues they wanted to explore in the surveys. For this reason, both the telephone and onsite surveys differed in question number and order, topics addressed, response categories, and (to a small extent) wording of core questions. In order to preserve comparability among surveys, the various evaluation teams worked together to limit these differences as much as possible. Some potential sources of differences involving timing, survey design, and onsite methodology still remained. For this reason, the MR Team has applied statistical controls, when possible, to account for these differences. However, some models include data for only some states if a question was not asked in a particular survey or if the question differed to such an extent that the MR Team judged it to be incompatible with the related question asked in other areas. Most notable for the CPUC, the onsite survey instrument used in California, Georgia, Kansas, and Pennsylvania did not ask about 2008 CFL purchases, so models explaining 2008 purchases were developed without *observed* data for the CPUC states, although we have used data from the CPUC surveys to *predict* 2008 purchases and to estimate the market effects as described below in the Executive Summary and Section 5.4 of this report. Moreover, the onsite protocols for the CPUC states directed the technicians to collect data on medium screw-base sockets only, while the protocols in other states involved collecting data on all sockets. Therefore, we have adjusted the socket counts for the CPUC states to reflect likely total socket counts and not just medium screw base ones. Note that these differences between the

instruments used in the CPUC states and those used elsewhere reflect the fact that the multistate modeling effort coalesced *after* the CPUC instruments had been designed and the data collected.

In reviewing the data, the team came to the conclusion that the onsite survey provided more accurate estimates of CFL purchases and use than did the RDD survey. Systematically higher reporting in the RDD survey points to the likelihood that the onsite data were more accurate than the RDD data. Furthermore, social theory holds that the more salient an issue or object is to an individual, the more likely she is to provide accurate responses about it. Given that most RDD survey respondents are probably sitting in one location on the phone, trying to complete the survey as quickly as possible, most likely give a thoughtful but not always accurate response to the number of CFLs they purchased in 2008. In contrast, during the onsite survey, the respondents physically walk around their homes with a trained technician; they are looking at the CFL at the time the technicians ask when the bulbs were purchased, thereby raising the salience of the issue in their minds.

Development of Program Variable

The primary independent variable of interest summarized CFL program activity in each of the areas included in the current analysis. To develop this important variable, the MR Team began by reviewing CFL program plans and documents, prior evaluation reports, and program summaries compiled by Consortium for Energy Efficiency (CEE), and the US Department of Energy (DOE), and ENERGY STAR in order to locate CFL programs in each state and gather information on each program through 2008. We supplemented this document review with direct inquiries to energy efficiency and CFL program managers and through searches of the websites of utilities, public service agencies, and energy service organizations. Experts on CFL programs across the nation also collectively assessed the cumulative strength of each program through 2007 in an effort to capture the effect of prior activity on current levels of saturation and recent purchases.[3]

The MR Team combined the information on programs within states or areas into three different program variables: cumulative program strength, 2008 program activity, and overall composite program activity. We performed statistical transformations necessitated by the nature of the data, and created three individual, state-level variables. The cumulative strength variable represented the average rating provided by the experts and required no transformations for inclusion in the model. The 2008 program activity variable represented a statistically transformed and combined measure that included data on the per-household CFL program budget and number of CFLs

[3] The experts were instructed to provide ratings on a zero to ten scale on the historic budget, marketing, CFLs incented and overall impression of strength of programs in each state in order to account for how prior program activity may be affecting current program-induced sales of CFLs.

incented by programs in the state. Finally, the composite program variable combined the cumulative strength and 2008 program activity variables.

Modeling Procedures and Results

The data collected in both the telephone and onsite surveys provided counts of CFLs purchases, use, and storage at different time periods, and the onsite survey also counted the total number of lighting sockets in the home. While, we converted the counts of total sockets and CFLs installed into a percentage representing CFL saturation, the count data for purchases, storage, and use did not have the so-called normal curve assumed by the most common statistical modeling procedure, Ordinary Least Square Regression (OLS); instead they were right skewed (see Section 3.6 for more detail). In response the MR Team modeled the count data using a statistically appropriate procedure known as the negative binomial regression model (NBRM). The data on CFL saturation—measured as the percentage of all sockets in the home filled with CFLs—were percentage data and not count data, so the MR Team relied on the more familiar OLS methods for modeling saturation.

The MR Team ran multiple models designed to explain CFL purchases in 2008 and the past three months as well as current use and current saturation (current being the time when the respective instruments were administered). The results suggest that CFL programs had a statistically significant net positive effect on CFL purchases in 2008 as well as current CFL use and saturation; however, the models did not find a net positive program effect on CFLs purchased in the past three months most likely due to the small number of respondents who had actually purchased CFLs in the past three months and the variation in the three month period in question across surveys.

Table 1 includes the model derived from onsite data used to calculate total net impacts for California. The results are derived from NBRM. Because the predictive variables are nonlinearly related to 2008 purchases, the interpretation of the coefficients is not immediately intuitive. The direct interpretation of the coefficient in the model is that the log likelihood of composite program variable affecting an increase in 2008 purchases is the log of 0.11. To convert the coefficient—commonly denoted as 'b'—into a form that is more user-friendly requires two steps. The first is to exponentiate the 'b' by raising the natural log to the 'b' power (commonly seen as $e^{\wedge b}$ or e^{b}), giving us a value, known as the factor change, of 1.11 for the composite program variable. To interpret this, one would say that an increase in the composite program score results in a factor change of 1.11 in the number of CFLs purchased in 2008. The factor change still is not directly applicable to predicting CFL purchases, so one takes the second step in making the coefficient easier to interpret by subtracting one from the factor score (*e.g.* 1.11-1=0.11); this yields what we have termed the "impact score". The impact score can be interpreted multiplicatively—each increase in the program score increased the number of bulbs purchased in 2009 by 0.11 bulbs.

The development of this model did not include the observed data from the four CPUC states because the onsite instrument used in those states did not ask about 2008 purchases. However, we were able to predict purchases based on the other data collected for the CPUC states. Therefore, the net impact estimate presented below in the Executive Summary and Section 5.4 of the report is based on *predicted* and not *observed* purchases for California. California, however, was included in the development of current CFL use models, which also point to statistically significant but relatively small program effects. Factors other than program activity that drive CFL purchases, use, and saturation include historic use of CFLs, homeownership, the number of sockets in the home, the size of the home, various demographic characteristics, and the timing of the survey in relation to when consumers typically purchase lighting products.

Table 1: Best Fit 2008 Purchase Model– Onsite*

Variables	Coefficient	90% Confidence Interval		Impact Score
		Low	High	
Composite Program	0.11	0.06	0.16	0.11
Years using CFL	0.10	0.06	0.14	0.10
Number of Sockets in Home	0.01	0.00	0.01	0.01
Number of Persons in Household	0.10	0.02	0.18	0.10
Self reported as White	0.42	0.09	0.74	0.52
Conducted During Fall Season	0.60	0.33	0.86	0.82
Constant	-0.79	-1.21	-0.38	n/a

*Sample size = 1,034 and pseudo R^2 = 1%.Excludes CPUC states as 2008 purchase data were not collected onsite.

Conclusions: Total Net Impact and Preliminary Recommendations

The application of the model in Table 1 to California suggests that the total net impact in 2008 were 0.23. The MR Team believes the models provide enough evidence to suggest that CFL program activity in 2008 had small but positive effects on CFL purchases once one takes into account the rapidly growing and changing national CFL market. However, concerns about the validity of the results for California due to our inability to include it in the development of the 2008 purchase model and the inclusion of spillover in the estimate of net impact in violation of the California evaluation protocols suggest that the results should most likely be used only to *inform* the evaluation of the 2006 to 2008 ULP but not to estimate net to gross ratios for the program. Likewise, California was not included in the current saturation model as the instruments did not collect data on who paid the electricity bill, a significant predictor of saturation. California, however, was included in the development of current CFL use models, so the validity is higher for this model.

In conclusion, the data we present here provide evidence that the California ULP program should continue its efforts to include more specialty bulbs among supported products and target the types of people who do not currently use CFLs at all or in large numbers, the venues where CFLs are sold in only limited quantities or at which non-users typically shop, and/or the general service

and specialty applications where CFLs are still not frequently used even in the homes of committed CFL users.

1 Introduction

This report summarizes the analyses conducted in support of the multistate CFL modeling effort, highlighting the results as they pertain to the total net impact of the California Upstream Lighting Program (ULP). The Sponsors of this study include the following: California Public Utilities Commission (CPUC), New York State Energy Research and Development Authority (NYSERDA), Wisconsin Public Service Commission (WPSC), Consumers Energy in Michigan (CE), the Connecticut Energy Conservation Management Board (ECMB), Connecticut Light and Power (CL&P), Northeast Utilities, (NU), The United Illuminating Company (UI), the Cape Light Compact (Cape Light), NSTAR, National Grid, Unitil, and Western Massachusetts Electric (WMECO), and Xcel Energy in Colorado (Xcel).[4] The evaluation team under contract with the CPUC includes NMR Group (NMR), The Cadmus Group, KEMA, PA Consulting, among others. Together with APPRISE, Inc., they are the primary firms responsible for data collection and analysis that are collaborating as part of this groundbreaking multi-Sponsor and multistate effort. This report draws on data from 16 different geographic areas in the United States (US), but was written specifically for the CPUC. Future revisions to this report will include comparisons of key results between states *if the Sponsors agree to share them*. The analyses draw on telephone survey data of over 9,300 households and onsite saturation surveys for about 1,400 households.[5]

1.1 Changing CFL Market and the Multistate Modeling Approach

The sponsors of CFL programs across the US have been conducting market effects analyses and calculating total net impact since the first programs appeared in the late 1980s. Over time, the methods have often evolved to take into account free ridership and/or spillover, new program design, and changes in the CFL market. The multistate modeling approach represents the efforts of multiple Sponsors and evaluators to test a new method for estimating total net impact in the face of increased CFL shipments and sales as well as rapid expansion of CFL programs throughout North America. This section briefly describes this evolution and the need for a new approach to estimating net program impact.

[4] Note that we refer to the Sponsors of this study because they comprise a mixture of state agencies, public service commissions, energy service organizations, and electric utilities. When capitalized, Sponsors refers to individual or multiple Sponsors of this study; when used in the lower-case form, we are referring more generally to sponsors of CFL lighting programs throughout North America.

[5] Members on the MR Team also serve on the evaluation teams for at least some of the other Sponsors of the multistate effort. When discussing sampling and data collection, we refer to the evaluation teams for individual Sponsors. The MR Team is the subset of evaluators focusing on the regression analyses presented in this report.

Many early CFL programs relied heavily on coupon and catalog approaches to support the technology. Some sponsors of such programs with this reliance calculated net energy savings using the following equation:[6]

Net energy savings = Gross energy savings x (1 + spillover rate – free ridership rate)

The net impact portion of this equation involved free ridership and spillover rates, which the sponsors estimated by surveying participants about the influence of the program on their in-program and out-of-program CFL purchases while in-program sales data came from tracking databases. This method relied heavily on having contact information for participants and a general idea of the number of program-supported products each participant had obtained.[7]

The shift to upstream markdown and buydown programs, which began gradually and has recently accelerated, led to a switch in the methods many program sponsors used to estimate total net impact. One of the key characteristics of upstream approaches is that they are largely invisible to the consumer, who simply sees a discounted CFL on the store shelf.[8] The consumer does not have to fill out rebate coupons or catalog forms to get the incented CFL, and therefore sponsors generally are not able to collect participant contact information that facilitates surveying customers to help determine free ridership and spillover rates.[9] Furthermore, free ridership is built into the program design; a participant no longer has the option of purchasing the CFL at full price when a particular store carries the CFL only at the discounted price, and the participant often is not aware of the subsidy (which would be necessary for accurate self-reporting on free ridership and spillover). In response, many CFL program sponsors adopted a net impact estimation method in which sales from their service territories were compared with sales from one or more non-program comparison areas, sometimes selected to be demographically similar to the program area. The net impact equaled the per-household CFL sales in the program area minus per-household CFL sales in the comparison area all divided by per-household program-supported sales in the program area. Such approaches relied on data from telephone, retail store surveys, or retailer sales data to estimate the net impact.[10]

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[6] Although the California Evaluation Protocols do not allow for the inclusion of spillover.

[7] See, for example, Nexus Market Research and RLW Analytics, *Impact Evaluation of the Massachusetts, Rhode Island, and Vermont 2003 Residential Lighting Programs*, prepared for The Cape Light Compact
State of Vermont Public Service Department for Efficiency Vermont, National Grid, Northeast Utilities, NSTAR Electric and Unitil Energy Systems, Inc., October 1, 2004.

[8] Some programs may include point-of-sale materials explaining that the discounted price is the result of a CFL program, but this is not universally the case.

[9] For a method of identifying upstream participants, see Wilson-Wright, L. J. Zynda, R. Prahl, K. Oswald, and A. Li (2009) "They're Out There – Somewhere: Locating and Evaluating CFLs Distributed through Markdown and Buydown Programs." In the *Proceedings of the 2009 International Energy Program Evaluation Conference*. Portland, OR, August 12-14, 2009.

[10] See, for example, Nexus Market Research, *2005 Baseline and Net-to-Gross Sales*, prepared for Cape Light Compact, National Grid, NSTAR, Western Massachusetts Electric, Unitil, October 27, 2006, and Glacier

More recent changes in the CFL market, however, have hampered the comparison area approach to estimating net impact. An increasing number of parties across the nation (and Canada) are now sponsoring upstream CFL programs, thereby severely limiting the number of potential non-program comparison areas, particularly those that are demographically similar to areas with longer histories of supporting CFLs.[11] Similar demographics are vital to the comparison state approach to control for such intervening factors as income, education, concentration of big box stores, housing type, and homeownership patterns that prior studies have found relate to CFL awareness and use.

Further muddying the field is increasing—though debated—evidence that CFL sales in the remaining *non-program* areas rival those in program areas.[12] Some explanations on why sales in non-program states have increased revolve around broader changes in the CFL market. In particular, the spiral medium-based screw-in CFL has become one of the primary symbols of energy efficiency, the image of which many media outlets and advocacy groups turn to when wanting to represent the concept of energy efficiency as a whole.[13] Moreover, due in large part to the successful efforts of long-standing programs and ENERGY STAR® partner manufacturers and retailers, CFLs have become increasingly available throughout the US, with the successful Wal-Mart campaign to sell one hundred million CFLs in 2007 (they sold 137 million) exemplifying this trend.[14] It is important to note that analyses conducted by Hoefgen (2007) strongly suggest that Wal-Mart sold many of these CFLs in places that *lacked* long-standing CFL incentive programs.[15]

Consulting, *FY04/05 Net-to-Gross Savings Adjustments for CFLs Rewarded through the ENERGY STAR Products Program*, Prepared for Wisconsin Department of Administration, January 11, 2006.

[11] In fact, some non-program areas included in this analysis for 2008 are sponsoring upstream CFL programs in 2009 (*e.g.*, Consumers Energy in Michigan) while other programs are being planned (*e.g.*, in parts of Ohio and Pennsylvania). Maryland had new programs in 2008 that are reflected in the analysis.

[12] Most observers agree that CFL sales have increased in non-program areas. The debate, however, reflects whether sales in non-program areas rival those in program ones. The debate revolves around the accuracy of the methods to estimate sales, namely telephone and onsite self-reported purchases, CFL shipments, and retailer surveys and shelf counts, all of which have relative strengths and weaknesses. Such disputes could be laid to rest if accurate, comparable sales data that truly captured all the major CFL sales venues became available for each state in the nation. To date, sales data have been reported sporadically and have not been representative of where consumers shop for CFLs nationwide. For example, see Hoefgen, L. (2007) "What the CFL Data in 18seconds.org Really Mean." May 3, 2007.

[13] See, for example, nwalliance.org, the website for the Northwest Energy Efficiency Alliance.

[14] Wal-Mart Stores (2009) "Compact Fluorescent Light Fact Sheet" PDF file accessed August 19, 2009 at http://walmartstores.com/FactsNews/FactSheets/#Sustainability.

[15] Hoefgen, L. (2007) "What the CFL Data in 18seconds.org Really Mean." May 3, 2007.

Table 1-1 provides a view of how the CFL market changed in the mid to late 2000s. National CFL shipments increased dramatically in 2006, and again in 2007, before falling off in 2008. The implication is that households in the US bought three to four times more CFLs in 2007 and 2008 than they did in 2004; given the long average lifetime of CFLs,[16] the number of CFLs installed could have increased by an even greater proportion.

Table 1-1: CFL Shipments to the United States

Year	Number of Units	Adjusted for Non-Residential Applications*
2004	93,475,116	82,258,102
2005	101,772,949	89,560,195
2006	184,686,594	162,524,203
2007	397,128,692	349,473,250
2008	337,485,972	296,987,655

Source: US Department of Commerce

* Shipment data in the second column include CFLs installed in commercial applications; the estimates in this third column include only those estimated shipments that will be installed in residential applications.

Similarly, there was a change in the areas of the country where CFLs were being sold during the same time period. While CFL sales were historically higher in states or areas with CFL incentive programs,[17] research conducted in California suggests that recent CFL sales in non-program comparison areas have been the same as or greater than those in California.[18,19] The CFL Markets Team has developed a number of hypotheses to explain these findings (see Cadmus *et al* 2009 for details), but preliminary analyses point toward the following explanation (quoted verbatim):

[16] About seven years for models of CFLs then being supported through markdown programs in New England, according to Nexus Market Research and RLW Analytics, *Residential Lighting Measure Life Study*, Prepared for New England Residential Lighting Program Sponsors, June 4, 2008.

[17] *Market Progress Evaluation Report (MPER) for the 2007 Massachusetts ENERGY STAR® Lighting Program*. Prepared by Nexus Market Research, RLW Analytics, and Dorothy Conant for Cape Light Compact, National Grid, NSTAR Electric, Unitil and, Western Massachusetts Electric Company, July 1, 2008. *Second Annual Comprehensive CFL Market Effects Study.* Prepared by Glacier Consulting for Wisconsin Focus on Energy, September 30, 2008.

[18] "Compact Fluorescent Lamps Market Effects Interim Report Draft", by Cadmus Group, KEMA, Itron, Nexus Market Research, and A. Goett Consulting. Report produced for California Public Utilities Commission, January 22, 2009.

[19] Although manufacturers who took part in the panel "The Future of CFL Programs - Should We Eliminate Financial Incentives to Encourage Customers to Purchase Standard Compact Fluorescent Lamps?" at the 2009 International Energy Program Evaluation Conference held August 12-14, 2009 in Portland, Oregon argued that the decrease in CFL sales in 2008 was smaller in program states than in non-program states. Their conclusions were based on sales data from retailers who carry their products; however, the data from which they drew their conclusions were proprietary and not available for review by independent evaluators.

> *Erosion of Incremental Market Effects over Time (Spillover Hypothesis).* California's programs may have caused market effects in both California and nationally in the past but, at this point, sales and awareness in the national market are very similar to conditions observed in California. Therefore, the California programs are likely no longer generating incremental market effects beyond any positive net impacts they may be generating, and any differences between California and other states have largely eroded.

While the hypothesis directly references California, one could make the argument that it applies equally to other long-standing CFL program states. For example, Winch and Talerico (2008) reported that Wisconsin saw a 132% increase in CFL sales from 2005 to 2007, but neighboring Michigan, which until recently did not sponsor CFL programs, experienced a 210% increase during the same time period.[20] CFL sales in Wisconsin still exceeded those in Michigan, but Michigan was closing the gap. In short, non-program states may be in the process of "catching up" to the level of sales and CFL use in program states. CFL sales in places with historic incentive programs may have leveled off as the market in those areas approached transformation, while CFL sales have increased in those states without programs or with recently implemented ones as more people become aware of and adopt the technology. However, more rigorous testing involving a diversity of states is needed to confirm this hypothesis.

A hypothetical example, depicted in Figure 1-1, illustrates why such a trend should not be unexpected.[21] Suppose a program in its first year is responsible for all sales of a given efficient technology in the program area, based on the fact that a non-program or baseline area has no sales; if the program did not exist, there would be no sales. From a sales perspective—that is, without considering actual vs. expected savings—the net impact is 1.0. Beginning in the second year, the program starts affecting the local market, even while the non-program market is developing to a lesser extent, and the net impact increases through year six, to a high of 3.1. After that, however, both the local and the non-program markets continue developing, with non-program sales eventually beginning to catch up to program ones as more households in those areas become aware of and adopt CFLs and the markets in both program and non-program areas become transformed; thus the total net impact falls below 1.0 by year ten, and to 0.0 by year 12.

Hence one function of an effective market transformation program is to accelerate the market adoption curve. We are suggesting that the pattern, not the timing or the numbers, applies more broadly. Based on the rapid development of the national CFL market, some observers suggested in 2008 (based on analysis of 2006 data) that the net impact in active program states had either

[20] Winch, R. and T. Talerico of Glacier Consulting, Group, LLC. 2008. *Second Annual Comprehensive CFL Market Effects Study – Final Report*. Delivered to the State of Wisconsin Public Service Commission, September 2008.

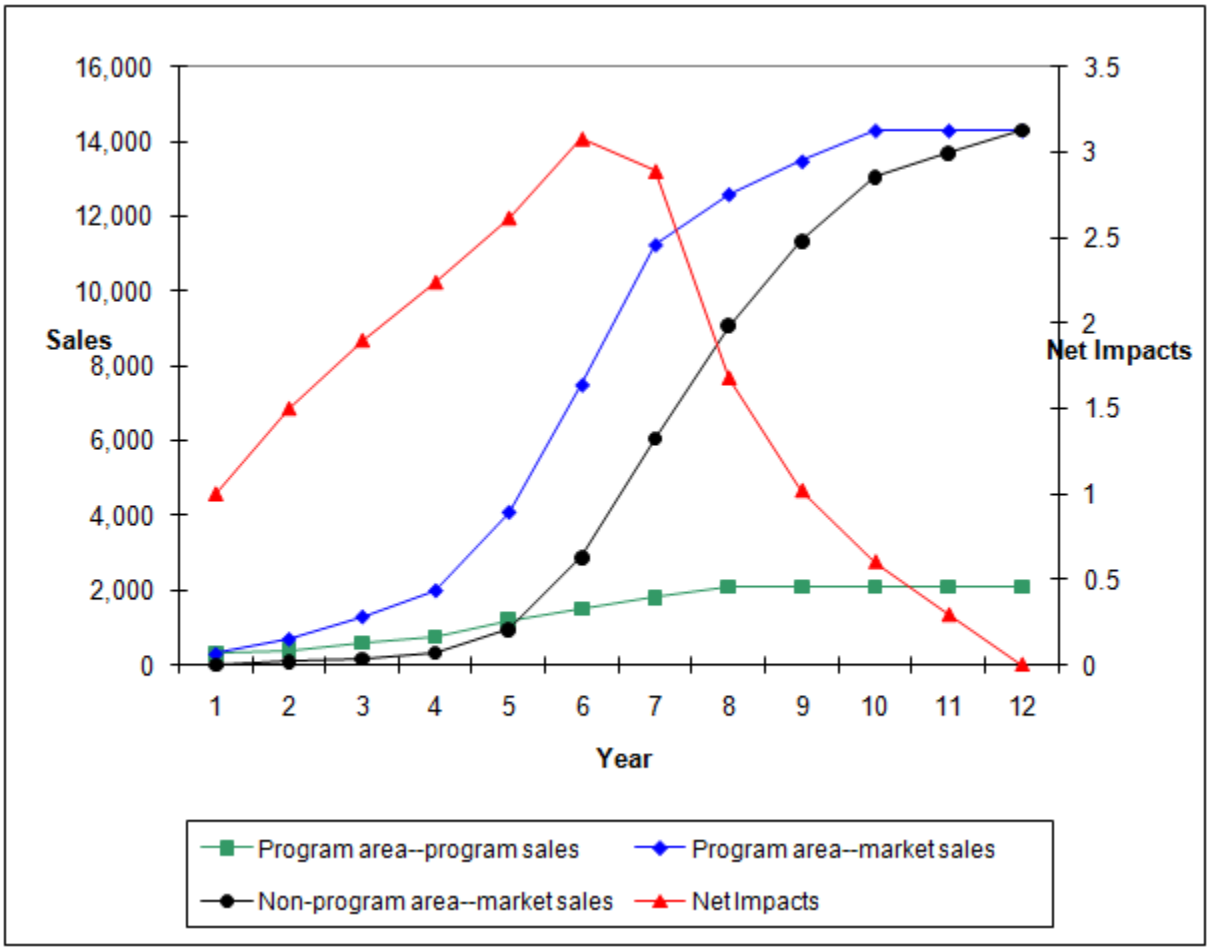
[21] This example is explained more fully in Hoefgen, L., A. Li, G. Azulay, Prahl R., and S. Oman, (2008) "Market Effects: Claim Them Now or Forever Hold Your Peace." In the *Proceedings of the 2008 Summer Study on Energy Efficiency in Buildings*, Asilomar, CA, August 17-22, 2008.

started to decline or would do so soon, and that the decline would occur over a fairly short period.[22]

Of course, these expectations are subject to other factors—many of which are at play in the CFL market—such as the development and introduction of new technologies, which could start the cycle over again, or changes in codes and standards, which could accelerate it, or disruptions in the economy. There are also at least two additional caveats to these expectations. First, an assumption underlying the oversimplified pattern depicted in Figure 1-1 is that market penetration of efficient technologies in both the program area and the comparison area will follow the standard S-shape curve, and that in both areas it will reach a limit near 100% of its long-term potential. If manufacturers and retailers were to change their strategies abruptly and fundamentally, or if prices were to increase substantially, the expected S-shape curve might not develop. Even without such fundamental supply-side changes, the market penetration could level off at a lower level in the comparison area. It is also possible that the total net impact could fall relatively slowly—particularly, again, if the curve in the comparison area should level off before that in the program area. Hence, given recent declines in the sales of CFLs nationwide, predictions about the future of the CFL market should be made cautiously.

[22] Hoefgen, L., A. Li, G. Azulay, Prahl R., and S. Oman, (2008) "Market Effects: Claim Them Now or Forever Hold Your Peace." In the *Proceedings of the 2008 Summer Study on Energy Efficiency in Buildings*, Asilomar, CA, August 17-22, 2008

Figure 1-1: Hypothetical Net Impact



The statistical analyses presented in this report seek to provide tests of the hypothesis that non-program states may be in the process of catching up to the level of sales and CFL use in program states, and to examine the drivers of and barriers to CFL use and sales in this changing CFL market. One of the primary goals is to isolate the net impact of programs—including the cumulative effect of past program activity—on current CFL sales and saturation. Isolating the net impact allows the MR Team to develop estimates of total net impact for each of the study Sponsors, an estimate that takes into account the changing CFL market in many areas across the nation. This analysis draws on telephone surveys of over 9,300 households and onsite saturation surveys for about 1,400 households (Table 1-2; see Section 2.1 for discussion of the choice of comparison areas). In this report, the MR Team presents statistical models and net impact estimates that we believe best describe CFL purchases, use, and saturation in the time periods under examination.

Table 1-2: Participating Areas, Sample Sizes, and Survey Dates

Area	Program Status		Telephone	Onsite	Survey Timing
	2008	Past 3 Months	Sample Size	Sample Size	
California IOU service territories	Established program	Established program	699	77	Fall, Winter 2008
Colorado - Xcel Energy	Moderate Program	Moderate Program	600	70	Early fall 2009
Connecticut	Established program	Established program	500	95	Spring, Summer 2009
District of Columbia	No program	No program	500	97	Winter 2009 Summer 2009
Georgia	Minor program	Minor program	579	62	Fall, Winter 2008
Houston, TX	No program	No program	503	99	Winter 2009 Summer 2009
Indiana	No program	No program	600	88	Spring, Summer 2009
Kansas	No program	No program	525	71	Fall, Winter 2008
Maryland	New program	New program	500	57	Spring, Summer 2009
Massachusetts	Established program	Established program	503	100	Spring, Summer 2009
Michigan – Consumer Energy service territory	No program	New program	657	86	Summer 2009
New York State, excluding New York City, Nassau and Suffolk Counties	Moderate program*	Moderate program*	1,000	203	Winter 2009 Summer 2009
New York City	Moderate program*	Moderate program*	502	100	Winter 2009 Summer 2009
Ohio, excluding Duke Energy service territory	No program	No program	501	98	Winter 2009 Summer 2009
Pennsylvania	No program	No program	653	59	Fall, Winter 2008
Wisconsin	Established program	Established program	503	82	Spring, Summer 2009
TOTAL SAMPLE AVAILABLE			9,325	1,444	

* Past NYSERDA CFL programs mainly supported CFLs through education, advertising, and marketing, including in cooperation with retailers and manufacturers, but markdown CFLs were a smaller component of the program. The current CFL expansion program expands the markdown component, among other activities, but had not been implemented at the time of the survey.

2 Survey Procedures

The data used in the modeling effort relied on two sources: a telephone survey and an onsite saturation survey in which evaluators for each Sponsor also verified when installed and stored CFLs were purchased. This section describes the choice of comparison areas, development of the surveys, sample designs and sampling error, and weighting schemes.

2.1 Choice of Comparison Areas

The multistate modeling effort relied on telephone and onsite survey data from areas with longstanding CFL programs, those with newer or smaller programs, and those with no CFL programs through 2008. As shown in Table 1-2, the seven Sponsors of this effort collectively account for the following areas:

- California (CA): areas served by Pacific Gas and Electric (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE) or collectively the investor owned utilities (IOUs) service territory
- Colorado (CO): the area served by Xcel Energy
- Connecticut (CT): the entire state
- Massachusetts (MA): the entire state
- Michigan (MI): the area served by Consumers Energy (CE) only
- New York State (less New York City and Nassau and Suffolk Counties, NYS) and New York City (NYC): Surveyed separately due to the demographic and economic differences between the two regions; the Long Island Power Authority was not a study sponsor.
- Wisconsin (WI): the entire state

In order to select comparison areas, the Sponsors and their respective evaluation teams examined data on household demographics, concentration of major retailers selling CFLs, and CFL programs across the nation to identify potential comparison areas lacking programs or with newer or smaller ones. The individual evaluation teams experienced difficulty in finding non-program areas for two reasons. First, many formerly non-program areas have recently begun implementing programs. Second, the remaining non-program areas often differ substantially from program ones regarding characteristics shown to relate to CFL sales (*e.g.*, homeownership, socioeconomic status, cost of living including electricity costs, and access to retailers selling CFLs). As a result, the comparison areas chosen for this study include a mixture of areas that currently do not have CFL programs, those with newer programs, and some that first implemented programs in 2009 but after the fielding of the telephone and onsite surveys that provide the data for this study.

The Sponsors and their evaluation teams settled on the use of the following comparison areas:[23]

- Georgia (GA), Kansas (KS), and Pennsylvania (PA): funded by the CPUC, who chose three combined states because no one non-program state was similar to the IOU service territory. Together with California, we refer to these as the CPUC areas or states.
- The District of Columbia (DC) and Houston: funded by NYSERDA, who chose two comparison areas because no one non-program city or county resembled New York City
- Ohio (OH): funded by NYSERDA as a comparison to New York State; the NYSERDA team excluded the 513/283 area code which overlaps heavily with the Duke Energy service territory because the utility had an active CFL program there in 2008.
- Maryland (MD): funded by the Sponsors of the Massachusetts ENERGY STAR Lighting Program as a comparison to Massachusetts. The Maryland electric utilities launched CFL programs in late 2007 and expanded them in 2008; therefore, it represents a substantial but new program area in our model.
- Indiana (IN): funded by the WPSC as a comparison area for Wisconsin

If the current or additional Sponsors decide to repeat this effort in the future, it is possible that the models will include areas representing a greater diversity of program experience and location—including more states in the South and West and some Canadian provinces.

2.2 Random-Digit Dial Telephone Surveys

While every Sponsor of this study desired an estimate of net impact, their individual study objectives differed to an extent. Therefore, the Sponsors and their evaluation teams worked together to develop telephone survey questionnaires that balanced the need for comparability across study areas while still meeting the individual needs of each Sponsor.[24]

After finalizing the telephone survey questionnaires, survey implementation in most states proceeded according to standard practices for random digit dial surveying methods. The evaluation teams purchased blocks of random residential ten-digit telephone numbers for the areas to be included in the survey, randomly called households, and attempted to interview the person responsible for lighting purchases, until reaching the desired survey sample size. The method differed slightly in California, Colorado, and Michigan where the CFL Markets Team randomly called residential customers in included service territories.[25] In no area did the evaluation teams stratify the sample design, although interviews in the CPUC-funded areas

[23] Note that all Sponsors of this effort are funding the data merging, analysis, and reporting efforts. We only mention who funded the survey because this relates to differences in the questionnaires and responses, as discussed in Section 2.4.

[24] The team thanks the Sponsors for their willingness to strike this balance in order to ensure comparability.

[25] Note that a few of the Xcel Energy customers were known program participants; we have kept their responses and information in the summary statistics presented in this report, but removed from them from the models.

continued on a random basis until interviewed reached 100 households in each area that had purchased CFLs in the past three months. The only residential respondents excluded from the study across areas were those who refused to answer the survey and the people who could not respond in English or Spanish (fielded only in the CPUC areas, New York City, and Houston).

Although the evaluation teams relied on random selection, the demographic characteristics of willing respondents in all areas differed from the population as reported in the US Census on two factors often found to be related to CFL use: homeownership and education, specifically the underrepresentation of renters and those with less than a high school education.[26] The MR Team developed a weighting scheme to correct for this underrepresentation using data on education by homeownership as reported by the US Census Bureau using the combined 2005 to 2007 *American Community Survey* (ACS) estimates for each area.[27] Appendix A discusses the development of the weighting scheme more fully and includes a table showing the scheme as well as sample design and sampling error for each area included in the current analysis.

Please note that the weighting schemes used in this study *differ* from those used in other reports delivered to individual Sponsors. The weighting schemes in other reports reflect concerns unique to those Sponsors. In contrast, this effort required a *consistent weighting scheme* across areas, and the ACS provided the source for this consistency. The implication is that *summary statistics presented in this report will likely differ from those presented in other reports based on the same data.* In many cases, the differences are slight, but sometimes they may appear more substantial. The MR Team encourages the Sponsors to discuss with their respective evaluation teams which results should be used for estimating electricity and demand savings and which to report in their regulatory filings.

2.3 Onsite Visits

The Sponsors and their respective evaluation teams decided to pair the RDD surveys with an onsite saturation study because of a general concern with the ability of respondents to provide accurate estimates of their CFL use, storage, and purchases during a RDD survey. Although respondents generally provide thoughtful estimates on the phone, most cannot give accurate on-the-spot estimates of the number of CFLs they have purchased or the number currently installed in their home. Some telephone surveys ask customers to walk through their home counting CFLs and sockets in each room in order to estimate saturation, but this can make the survey lengthy and tedious for the respondents, thereby reducing response rates. The onsite survey provides a more accurate approach of counting the number of CFLs and all other lighting products in use

[26] Such underrepresentation is common in telephone surveys. For example, see Galesic, M., R. Tourangeau, M.P. Couper (2006) "Complementing Random-Digit-Dial Telephone Surveys with Other Approaches to Collecting Sensitive Data." *American Journal of Preventive Medicine*. Volume 35, Number 5.

[27] United States Bureau of the Census (2009) *2005-2007 American Community Survey 3-Year Estimates*. http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=ACS&_submenuId=datasets_2&_lang=en.

(otherwise known as a socket count) and in storage as well as determining CFL saturation rates (*i.e.* percentage of sockets filled with CFLs). It is also likely that respondents provide a more accurate estimate of when they purchased CFLs found in the home when actually looking at the product with a technician than when asked in a telephone survey while sitting or standing in one place. Such estimates of purchases still include some amount of self-report error, but, as analyses below show, we believe they result in more reliable estimates than those obtained on the telephone.

2.3.1 Recruiting Onsite Participants

The respective evaluation teams identified onsite participants through the telephone surveys. Twenty to 25% of telephone survey respondents voiced initial interest in the onsite survey. Sponsors offered $100 to $150 incentives to the homeowners, depending on the cost of living in their area, to entice customers to participate in the onsite visit. However, when calling to set up the visits, fewer respondents than expected decided to move forward with the onsite visits, reflecting difficulty with scheduling (most visits were conducted during the summer), lack of familiarity with the Sponsor (in non-program states), and distrust of letting strangers into the home. Thus, while the team originally anticipated an onsite sample size of about 1,600, the final onsite sample size was actually 1,444.

2.3.2 Conducting the Onsite Visit

The Sponsors and their evaluation teams cooperatively developed onsite survey instruments. As with the telephone survey questionnaires, the onsite surveys differed somewhat, but struck a balance between meeting the needs of the individual Sponsor and comparability for the multistate modeling effort. Likewise, the actual details of the onsite methods varied slightly among data collection firms, but they all generally followed the pattern described here.

A trained technician arrived at the home at a pre-scheduled time, introduced himself or herself, and asked for the contact person who had been identified when scheduling the visit. The technician then asked the respondent a series of questions about household demographics, the characteristics of the home, and lighting usage. The respondent and the technician next walked through each room of the home examining all lighting sockets to see if they contained a bulb and, if so, the type of lighting technology in use. If the product was a CFL, the technician also asked the respondent to estimate when he or she purchased that particular CFL. The technician and householder also examined bulbs in storage, again noting similar detailed information on stored CFLs. Visits averaged two hours in most areas, although some Sponsors also collected information on home electronics adding to the length of the visit.

In order to account for any potential bias toward CFL enthusiasts or homeowners, the MR Team weighted the onsite sample back to the telephone survey reported familiarity with CFLs and the

percentage of households that own or rent in each area included in the study.[28] The weighting scheme is presented in Appendix A.

2.4 Comparability among Survey Instruments

The Sponsors and their evaluation teams collectively fielded seven telephone surveys and seven onsite surveys in 16 areas, with some questions tailored to either program or non-program respondents. To achieve comparability on the key issues explored in the multistate modeling effort, each telephone survey included a core set of questions about awareness, familiarity, satisfaction, use, and purchases, as well as a standard suite of demographic questions. Likewise, each onsite survey followed similar procedures to identify CFLs, count sockets, and ascertain when CFLs were obtained by the household.

While each Sponsor was interested in gathering information to develop an estimate of total net impact, most also had additional issues they wanted to explore in the surveys. For this reason, both the telephone and onsite surveys differed in question number and order, topics addressed, response categories, and (to a small extent) wording of core questions. In order to preserve comparability between surveys, we limited these differences as much as possible. Some potential sources of differences involving timing, survey design, and onsite methodology still remain. As the discussion below indicates, these differences nearly always involve the CPUC telephone and onsite surveys to some extent. This reflects the fact that the telephone and onsite surveys conducted for the CPUC were developed and fielded prior to the formation of the multistate modeling effort; the surveys for all other areas were designed after the multistate modeling effort had begun to coalesce, allowing the respective evaluation teams to create comparable instruments and methods across the other 12 areas in the study.

2.4.1 Differences in Timing

Survey timing is one of the differences that may have had an impact on comparability. This involves three different considerations.[29] The first is the time period under consideration in the CPUC study areas. Because of the three-year budget and evaluation period used by the CPUC, the telephone and onsite surveys conducted in California, Georgia, Kansas, and Pennsylvania asked about CFLs obtained and used from 2006 through the fall of 2008 as well as about those obtained in the past three months. The MR Team created a dummy variable to control for differences that may be associated with the timing and, as discussed below, survey instruments and methodologies.

[28] In the weighting scheme used in other reports delivered to the CPUC, Cadmus weighted data on whether or not the respondent reported using any CFLs. We rejected this scheme because those familiar with CFLs may still use them (as we found in the onsite visits) but were not asked about their CFL use. Therefore, familiarity seemed to be a slightly more reliable variable on which to weigh the data.

[29] Luckily, the collapse of the financial markets is not one of them. All of the telephone and onsite surveys were conducted after September 2008, the period many identify as a major turning point in the economy.

The second issue reflects the timing of the telephone surveys. The CFL Markets Team and the NYSERDA evaluation team conducted the telephone surveys funded by the CPUC and NYSERDA (New York State, New York City, DC, Ohio, and Houston) in late fall and early winter, respectively, which tend to be peak periods for lighting purchases and use. The evaluation teams fielded the other telephone surveys in the summer, when lighting use and purchases are less frequent. Furthermore, the onsite surveys in the NYSERDA states took place seven to nine months after the fielding of the telephone survey, likely contributing to differences in onsite- and telephone-based reports of purchases and use. Because we found evidence of timing effects on the purchase and use data (see Section 3.4), the MR Team created a second dummy variable to control for the states in which the telephone surveys were conducted in the fall or early winter.

2.4.2 Differences in the Survey Instrument and Methodology

In addition to timing, differences in questioning techniques and wording may also have affected some responses. These apply largely to comparisons between the CPUC states of California, Georgia, Kansas, and Pennsylvania and other areas and reflect the fact that the CPUC study was designed and fielded prior to the development of the multi-Sponsor modeling effort. Moreover, the instruments used in the CPUC states differ from those used in the other areas due to their focus on evaluating the entire 2006 to 2008 program period for the CPUC but only 2008 and early 2009 for the other areas. The MR Team has also noticed some systematic differences in the Colorado data that may be attributable to the telephone and onsite survey instruments and their implementation. We have identified a number of concerns related to the differences between the CPUC and Colorado surveys and those conducted in other states.

First, the CPUC telephone survey instrument used a different format to capture self-reported purchases, use, and storage. For purchases, the respondents provided estimates of their total purchases from 2006 to 2008 and then were asked to parcel out the number purchased in each year, starting with 2006 and working forward. This approach appears to have resulted in systematically lower telephone survey estimates of CFL purchases in 2008 the CPUC states when compared to estimates from the other states. For use and storage, the respondents were asked to estimate how many CFLs they were using or storing at the time of the survey; then they were asked if that number was the same three months ago. Only those responding “no” to this prior question were subsequently asked how many CFLs they were using or storing three months ago. This approach led to systematically higher estimates of use and storage rates “three months ago” (see Appendix B).

Second, the CPUC telephone and onsite surveys both asked respondents how many CFLs they had purchased in the past three months. For the telephone survey (fielded in October and November of 2008), this period largely corresponded to July through October, depending on when the respondent answered the survey. The onsite visits were conducted almost exclusively in December of 2008; once again, respondents were asked to estimate the number of CFLs

purchased in the past three months. However, their reference point was then September through December, again depending on the exact date of the onsite visit. The implication is that the telephone survey generally asked about late summer purchases—typically a time of relatively few lighting purchases—while the onsite survey asked about purchases in the fall—typically a time of more numerous lighting purchases. Although the CPUC instrument asked a follow-up question about purchases between the telephone and onsite surveys, a discrepancy in the two estimates remains. In contrast, the other surveys did not ask the onsite participants to restate an estimate of purchases in the past three months. Instead, the technician specifically asked the respondents if they had purchased individual CFLs *in same three month time period corresponding to the telephone survey*. The implication is that the difference in estimates of three month purchases between the telephone and onsite surveys was greater for the CPUC states than for the other areas (Table 3-3).

Third, CPUC onsite saturation methods counted only medium screw-based sockets, whereas all other states included all lighting sockets. The MR Team addressed this issue in slightly different ways in California versus the other three CPUC states. In California, the CFL Markets Team provided the MR Team with data on the number of small screw and pin based sockets counted in onsite saturation surveys being conducted independently for the Market Effects Evaluation from those onsite visits summarized here. With these data, we estimated that about 31% of all sockets and eight percent of CFLs were not medium-screw based. In the other three CPUC states, the MR Team examined the base type of sockets in all other areas in the study, estimating that, on average, homes had about three percent of CFLs and 25% of all bulbs in sockets other than medium-screw based ones. We then increased the onsite estimate of CFLs in California homes by eight percent and in Georgia, Kansas, and Pennsylvania homes by three percent. For all sockets, we added an additional 31% of sockets to each California home and an additional 25% of sockets to homes in the other three CPUC states.

Fourth, the CPUC instrument did not ask about CFL storage or use at the beginning of 2008; therefore, we cannot use these states in models explaining use at the beginning of 2008 or 2008 purchases when "use at the beginning of 2008" is a key variable.

The Colorado data demonstrate some idiosyncrasies, in particular high onsite estimates of purchases in 2008 (1.5 CFLs more than the next state, Connecticut). A portion of the Colorado data was gathered directly from program participants listed in tracking databases instead of a random dialing of all residential electric customers in the their service territory. This accounts for some systematic differences from the other areas in the study, but concerns about high average use and purchase numbers remain even after removing these known participants. Another potential source of differences reflects the fact that, only a small number of renters were surveyed (See Appendix A) and, given the weighting scheme that includes homeownership, has caused a few renting respondents to have a disproportionate impact on the data. Other oddities in the data may be attributable to the administration of the survey, but this is not something that can

be confirmed at this time and requires further investigation. An attempt was made to include the Colorado data in modeling for this draft, but the model validation showed a significant decline in predictive power. After removing Colorado from the statistical analyses, the models behaved as expected, with model-based predicted values falling much closer to observed ones. We will continue to inspect the Colorado data, and every effort will be made to include Colorado in the modeling for final draft of this analysis should our inspection demonstrate that this is a statistically and methodological sound choice. Note that the report summarizes data for the Colorado respondents but excludes them from the more advanced statistical analyses.

3 Variable Specification

The Sponsors and evaluation teams collected nearly all of the data needed for the modeling effort through the telephone and onsite surveys, but we gathered a few from other sources. These include the program variable, unemployment rates at the time of the survey, the change in the unemployment rate from January through December 2008, the concentration of various types of discount or home improvement stores (collectively called box stores), and the political orientation of the county.

3.1 Program variables[30]

The program variables were the key components of the statistical models guiding the calculation of the net impact. The MR Team began development of this variable by reviewing CFL program plans and documents, prior evaluation reports, and program summaries compiled by the Consortium for Energy Efficiency (CEE), the US Department of Energy (DOE), and ENERGY STAR in order to locate CFL programs in each state and gather information on CFL program activity through 2008 in each area. Specifically, we searched for data on the program budgets, the number of CFLs incented, when the current program and any of its predecessors had been launched, marketing and advertising support, and the method of support (*e.g.*, retail coupons, catalog, and/or upstream approaches). The MR Team had relatively few problems gathering such information from the Sponsors of this study for 2008 program activity (although we did ask the Sponsors to confirm or clarify the information), but we found it necessary to turn to alternative sources for information on program activity in states with newer or smaller CFL programs and for program activity that occurred in earlier years. We relied heavily on web-based searches for gathering this information and, when programs existed and managers could be identified, contacting the program managers to gather the necessary data.

[30] NMR and Shel Feldman used a similar method in the appliances regression modeling approach conducted as part of the Market Progress and Evaluation Report for the Massachusetts ENERGY STAR Appliances Program. See NMR and Feldman (2005) *Statistical analyses of Market Penetration of Energy Star-compliant Appliances*. Final delivered July 2005.

We were not able to locate consistent data across areas on programs prior to 2008, but the MR Team believed that it was important to account for potential cumulative effects of earlier program activity on 2008 CFL purchases. For this reason, we decided to have individuals knowledgeable about CFL programs nationally rate the strength of prior program activity for each of the 16 states on four key variables: marketing and advertising, budget, and CFLs incented, as well as an overall rating of program strength. Although we asked six individuals not directly associated with this evaluation to provide ratings, three of the six could not provide ratings for various reasons.[31] One wanted to participate, but felt he did not have sufficient knowledge to do so. The last two individuals provided ratings, and to supplement these, three MR Team members also rated the programs on the same variables.[32] We then averaged the scores of the five raters on each individual component of cumulative program strength (*e.g.,* budget, overall, etc.), weighting those of the two independent raters higher than those from the MR Team. Finally, we summed the scores for each component into one "cumulative program strength" variable ranging from a possible low of zero to a high of 20 for each state.

For the 2008 program activity variable, we computed state-level per-household estimates of CFL program budgets and products incented in that year for each study area. Because we had distributions that did not conform to the normal (*aka* bell-shaped) curve, we used the cubic root of these per-household estimates of budget and CFL incented. Furthermore, to adjust for different units of measurement (*i.e.*, dollars and CFLs); we standardized each estimate of per-household budget and of per-household CFLs. Finally, we summed the standardized scores to create the state-level 2008 program activity variable.

[31] Two worked for organizations that would not allow them to rate members, and one did not have the time.
[32] We subjected the ratings to tests of reliability using Cronbach's alpha, and, for each measure, reliability exceeded 80%, pointing to high levels of consistency between the raters.

As a final step, we developed a "composite program variable" by summing the 2008 program activity variable and the standardized cubic root of the cumulative program strength rating. The composite program variable treated prior program activity as part of the current program, rather than searching for its unique effects as did the disaggregated cumulative effect variable. Table 3-1 lists the variables for each area used in the analysis.

Table 3-1: Program Variable by Area

	Prior Program Rating	2008 Program Activity	Composite Score
CA	19.000	3.451	4.914
CO	6.500	0.822	1.341
CT	14.722	2.893	4.088
DC	0.000	-1.937	-3.149
GA	3.056	-0.262	-0.169
IN	0.000	-1.937	-3.149
KS	0.000	-1.937	-3.149
MD	1.278	1.849	1.717
MA	16.056	2.076	3.254
MI	0.000	-1.937	-3.149
NYS	7.833	0.389	1.113
NYC	7.833	0.325	1.085
OH	0.333	-1.937	-2.479
PA	1.333	-1.937	-2.085
Houston	0.000	-1.937	-3.149
WI	13.611	2.014	2.965

3.2 Additional Non-survey Variables

The MR Team believed that certain external factors may have affected CFL sales and use, including the local economic conditions and the concentration of box stores.[33] Turning first to economic conditions, the MR Team considered multiple ways of capturing their potential impact on CFL sales, ultimately focusing on county-level foreclosure and unemployment rates. However, after thorough searching, we could not identify a reliable source of foreclosure rate data; the sources we found were either out of date (*i.e.*, preceded the mortgage crisis) or did not adequately cover the entire state or area (*e.g.*, data on rural areas was often missing). Therefore, we decided to turn solely to unemployment rates to capture economic conditions.

[33] We chose the county level because it allowed for greater variation than state-level statistics, which would have been collinear with the program variable. The data needed to develop the external variables were not always available at such smaller units of analysis such as the zip code.

The question then became which unemployment rate to use. Some of the telephone surveys questioned respondents about their employment status, but the question was not included in all of the surveys. In order to gather consistent unemployment data from all study areas, we turned to the US Bureau of Labor Statistics (BLS), the most widely used source of such data in the country.[34] The MR Team relied on two different measures of unemployment, both measured at the county level. The first was the county unemployment rate during the month the telephone survey was fielded. The second was the change in the county unemployment rate from January 2008 to December 2008. The first approach provides a snapshot of the economic conditions in the county, while the second captures the relative change in the economic conditions. Both an absolutely high unemployment rate but also large increases in unemployment rates could affect purchasing behavior of CFLs, among other products.

The models also tested four different variables to capture the concentration of big box stores, specifically Home Depot, Lowes, Menards, and Wal-Mart (including Sam's Club).[35] First, the MR Team used the "store locator" search engine on each retailer's website to count the number of their stores in each county in the study area. We then converted the store counts to estimated total square feet by county. For Wal-Mart, we used estimates gathered from its corporate website about the average square footage of each of its various store types (*i.e.*, Supercenter, Discount, Marketside, Neighborhood, and Sam's Club). We also located a national estimate of average square footage for Home Depot and applied that not only to Home Depot but also Lowes and Menards, because we were unable to locate a similar number for Lowes and Menards. We then summed the results into three different county-level estimates of total square footage for Wal-Mart stores and non-Wal-Mart stores, and then combined Wal-Mart and all other box stores. To adjust for the size of the county, we divided the square footage of each box store per county by the total number of households in the county to yield variables capturing the concentration of box stores per household. The fourth variable was a state-level estimate of the concentration of Wal-Mart stores per household to acknowledge the fact that people may shop outside of their county of residence.

The MR Team also tested whether the political climate of the respondent's county influenced their CFL use and purchase behavior using data compiled by the Many Eyes website.[36] This variable, the partisan voting index (PVI) for 2008, was found by subtracting the percentage of the republican votes received in a county from the percentage of democratic votes received in a county; this figure was then subtracted from the national democratic margin of victory to yield

[34] The BLS defines unemployment as jobless workers actually seeking employment; the measure excludes so-called "discouraged" jobless, those who have given up their job search.
[35] While Menards stores exist only in the parts of the Midwest, the chain is responsible for large numbers of CFL sales in these areas.
[36] Many Eyes at http://manyeyes.alphaworks.ibm.com/manyeyes/ is a research lab at IBM that maintains a number of public data sets including voting records.

the county's PVI. The more negative the PVI, the more heavily the area leaned Democratic in the 2008 election.

Finally, the MR Team created a dummy variable using the current US Census Bureau designations of metropolitan counties to control for effects that may be associated with central cities and their immediate suburbs as opposed to areas with smaller cities and towns (i.e., less than 50,000 people in any of the cities or towns in the county).

3.3 Variable Transformation[37]

Many of the survey-based variables required minor transformations to prepare them for statistical analysis. First, we recoded all respondents in the telephone survey who said they were not aware of CFLs or who did not know the number of CFLs they had purchased, had in use, or had in storage as "zero" in order to include them in the analysis.[38] In contrast, for the onsite data, a trained technician was able to collect CFL use, purchase, and storage data from respondents, including those not aware of CFLs. A few respondents reported that they did not recall when they purchased some of the CFLs found in their homes, and the MR team treated such data as "missing".

Second, the telephone surveys asked respondents to provide their annual household income in the broad categories used by the US Census Bureau. However, the cost of living (COL) differs greatly among the 16 areas included in the study, requiring that we adjust the income categories to a consistent base. The MR Team adjusted COL in all states and DC to an average US base using data compiled by the Missouri Department of Economic Development.[39] For Houston, we used a 2008 estimate provided by the Greater Houston Convention and Visitors Bureau.[40] New York State and New York City provided a greater challenge as the extremely high COL in Manhattan biases the results not only for New York City but also for the entire state of New York. The American Chamber of Commerce Researchers Association (ACCRA) provides the most commonly used information on COL data and drives nearly all COL calculators reported for the US.[41] ACCRA keeps data on cities, however, and not states. Furthermore, for New York City, it lists Manhattan, Brooklyn, and Queens separately because they have such different COL

[37] Note that the team also carefully adjusted the response codes to force them into agreement between the various versions of the surveys. To offer just one example, some surveys coded female as 1 and male as 2, while other flipped the order.

[38] Note that we recognize that some people who are not aware of CFLs may in fact have used or even purchased them, but in a telephone survey one cannot question someone about a product of which they have no knowledge. The onsite saturation study helps to correct for this possible scenario by looking for CFLs in all households, even those of people not aware of them.

[39] Missouri Department of Economic Development (2009) *Cost of Living Data Series, 1st Quarter 2009.* http://www.missourieconomy.org/indicators/cost_of_living/index.stm

[40] Great Houston Convention and Visitors Bureau (2009) *Cost of Living.* http://www.visithoustontexas.com/media/statistics/Houston_Stats_Cost_of_Living

[41] See ACCRA Cost of Living Index at http://www.coli.org/

but does not track the Bronx or Staten Island. We used online calculators to locate areas with very similar COL to cities in upstate New York and found that Connecticut has a COL similar to most of them; we therefore applied the Connecticut COL adjustment to New York State. The COL in Manhattan far exceeds that of any other city in the US but is balanced by the four other boroughs with Queens (and likely the similar Staten Island) having higher COL than Brooklyn and the Bronx falling far below the others. On balance, it seemed as if the COL in DC served as a useful adjustment for New York City, striking a balance between Manhattan and the other four boroughs and being relatively similar to the COL in Queens.

Third, categorical data require special treatment in the types of statistical procedures we used to model CFL sales and use. The procedures we used attempt to provide the net impact of a unit change in each variable on CFL purchases or use; for example, how much recent CFL purchases change for each percentage of sockets already containing a CFL. The analysis and interpretation is rather straightforward when the dependent (explained) and independent (explanatory) variables are quantitative and continuous (assuming all other statistical assumptions are valid), but they become less clear when the independent variables are categorical, meaning that a number stands in place for a characteristic, concept, or idea (*e.g.*, yes, no, don't know; homeowner, renter; etc.). Although some statistical procedures allow for the inclusion of categorical independent variables with no transformations (*e.g.*, analysis of covariance or ANCOVA), the nature of our dependent variables (*i.e.*, CFL purchase and use) forced us to use procedures that are less adept at handling untransformed categorical data.

The accepted statistical procedure for dealing with categorical data in such cases is to make them dichotomous variables—that is, coded as one for having the characteristic and zero for not. When more than two responses are possible, the analyst creates a series of dichotomous variables, one for each of the characteristics under question. We followed this accepted procedure, but found that we needed to limit the number of dichotomous variables to a manageable size.[42] We reviewed the data for each categorical variable and then combined response categories into larger groups before creating the dichotomous choices. Table 3-2 summarizes the variables treated in this manner.

[42] For example, if we had categorized all response possibilities for just income and education alone, we would have had nearly 20 individual variables to capture just those two variables.

Table 3-2: Transformation of Categorical Variables

Variable	Transformation
Home size	Divided into three individual dichotomous variables 1. Less than 2,000 square feet or not 2. 2,000 to 3,999 square feet or not 3. 4,000 or more square feet or not Note that we also include home size as a single variable grouped into these three categories as they represent "steps" of 2,000 square feet each.
Education	Divided into a two separate dichotomous variable: 1. College degree or not 2. High school diploma or not
COL Adjusted Income	After adjusting for the COL, divided into three individual dichotomous variables: 1. Low income (approximate annual income less than $30,000, which is 60% of the federal median for a household of three, the average household size) or not 2. Moderate income (income between $30,000 and $99,999) or not 3. High income (income $100,000 or more) or not Note that about one-fourth of the sample refused to respond to our inquiry about their household income.
Self-reported Race	Divided into a single dichotomous variable: race self-reported as white or not.

Appendix B summarizes the key telephone survey reported demographic and CFL-related variables (e.g., purchase, storage, use) across all sixteen states included in the current report.

3.4 Comparison of Telephone and Onsite Reported CFL Purchases and Use

Table 3-3 and Table 3-4 compare the telephone- and onsite-reported CFL purchases and use for the onsite participants. The comparisons in Table 3-3 suggest that onsite participants overstated their purchases for 2008 when they responded to the telephone survey, but their reporting differences for purchases in the past three months are mixed. Note that the CPUC states of California, Georgia, Kansas, and Pennsylvania consistently show much larger onsite verified purchases in the past three months than other states, perhaps reflecting the fact that the telephone survey captured three summer months while the onsite survey captured three fall months, as discuss above in Section 2.4.2. Alternatively, the NYSERDA study areas (New York State, New York City, DC, Houston, and Ohio) generally show higher three month purchases from the telephone rather than the onsite survey. Although the onsite technicians asked NYSERDA respondents if they had purchased the CFLs in the same three months asked in the telephone survey, the seven to nine month delay between the telephone survey and onsite visit likely contributed to the observed differences, namely that people forgot which CFLs they had

purchased in the relevant three month period. Overall, telephone and onsite survey reports of three-month purchases are typically closer because respondents in most areas (although not in the CPUC states or Colorado) were asked to account for differences in three month purchases between the two surveys. Table 3-4, in contrast, suggests that respondents often understate their current use of CFLs—only respondents in Houston overstated their current CFL use and they did so by 0.7 CFLs.

Table 3-3: Self-Reported Purchases for Onsite Participants by Telephone and Onsite Responses

(Base = onsite participants, weighted on familiarity, education, and homeownership)

State	Sample Size	CFL Purchased Past Three Months*		CFL Purchased in Past Year	
		Telephone	Onsite	Telephone	Onsite
CA	77	0.4	2.9	1.3	n/a
CO	70	0.4	0.5	4.1	5.1
CT	95	0.5	0.5	3.9**	3.6
DC	97	0.7	0.5	2.6	2.0
GA	62	0.4**	3.5	1.2	n/a
IN	88	0.8	0.9	3.3	1.6
KS	71	1.9	3.3	0.9	n/a
MD	57	0.4	1.0	3.6	2.0
MA	100	0.3	0.8	3.3	1.6
MI	86	0.2	1.2	2.8	2.7
NYS	203	1.2	0.5	5.0	3.8
NYC	100	1.2	0.4	3.1	2.6
OH	98	1.4	0.6	4.0	2.6
PA	59	0.5	1.7	1.1	n/a
Houston	99	0.9	0.3	5.0	1.1
WI	82	0.6	0.6	4.2	3.1

* The "past three months" onsite purchase estimates from the CPUC data have been verified to be higher than telephone survey reports in separate analyses of the same data. The CPUC onsites asked respondents about their purchases "in the past three months" but those three months varied from the period referenced in the telephone survey. Although the CPUC onsite instrument attempted to correct for this by also determining how many of the CFLs purchased in the past three months had been obtained since the telephone survey, the discrepancy still remains. In contrast, the "three months" about which we inquired in the other states are the same three months). Respondents were explicitly asked to account for differences in three month purchases between the onsite and telephone surveys.

** One outlier removed from estimate.

Table 3-4: Self-Reported CFL Use for Onsite Participants by Telephone and Onsite Responses

(Base = onsite participants, weighted on familiarity, education, and homeownership)

State	Sample Size	CFL Currently in Use	
		Telephone	Onsite
CA	77	8.0	12.3
CO	70	5.9	10.0
CT	95	9.1	10.4
DC	97	3.4	4.2
GA	62	7.2*	8.6
IN	88	6.2	7.7
KS	71	7.1	12.7
MD	57	5.8	7.3
MA	100	7.1	9.5
MI	86	7.8	9.0
NYS	203	6.3	11.0
NYC	100	3.5	5.8
OH	98	5.2	7.5
PA	59	6.8	7.3
Houston	99	5.9	5.2
WI	82	7.8	10.5

* One outlier removed from estimate.

The lack of awareness accounts for some of the observed differences between telephone and onsite survey estimates of use. Telephone survey respondents not aware of CFLs could not be asked questions about their use or purchases, and we assumed that they would not have installed or purchased any CFLs. In fact, some of them were CFLs users and had recently purchased the product. Likewise, although those not at all familiar with CFLs were asked some use and purchase questions, it is reasonable to assume their answers may suffer from bias associated with their lack of familiarity. Overall, however, awareness and familiarity account for only a small part of the error as the following graphs demonstrate.

Figure 3-1 through Figure 3-6 compare the number of CFLs that telephone survey respondents reported currently purchasing or using by the onsite verified purchase or current use. Specifically, Figure 3-1 plots telephone reported purchases in 2008 by onsite verified purchases for the same year and Figure 3-3 shows similar data for purchases in the past three months. Each graph suggests that there was only a slight positive relationship between telephone reported and onsite verified purchases. Figure 3-2 and Figure 3-4 compare the telephone survey reported purchases in each time period by the self-reporting error as determined by the difference between the telephone estimate and onsite verified purchases; these two graphs suggest that those who originally reported purchasing a greater number of CFLs exhibited higher levels of reporting error than those with just a few self-reported purchases. The current CFL use data tell a

contrasting story to the purchase data. Figure 3-5 displays the telephone survey reported estimates of current CFL use and the onsite verified current use, while Figure 3-6 plots telephone reported use against the difference between the telephone and onsite estimates. In these graphs we find that telephone survey respondents generally knew that they had zero, a few, or many CFLs installed, but they still exhibited a great deal of error in their actual point estimates of use. Furthermore, also unlike purchases, the error in the point estimates was not related to the number of CFLs reported as used in the telephone survey.

Figure 3-1: Telephone Survey Reported vs. Onsite Verified CFL Purchases in 2008

(n=1,012; excludes outliers and respondents not familiar with or aware of CFLs; intercept set equal to zero; not available for CPUC states)

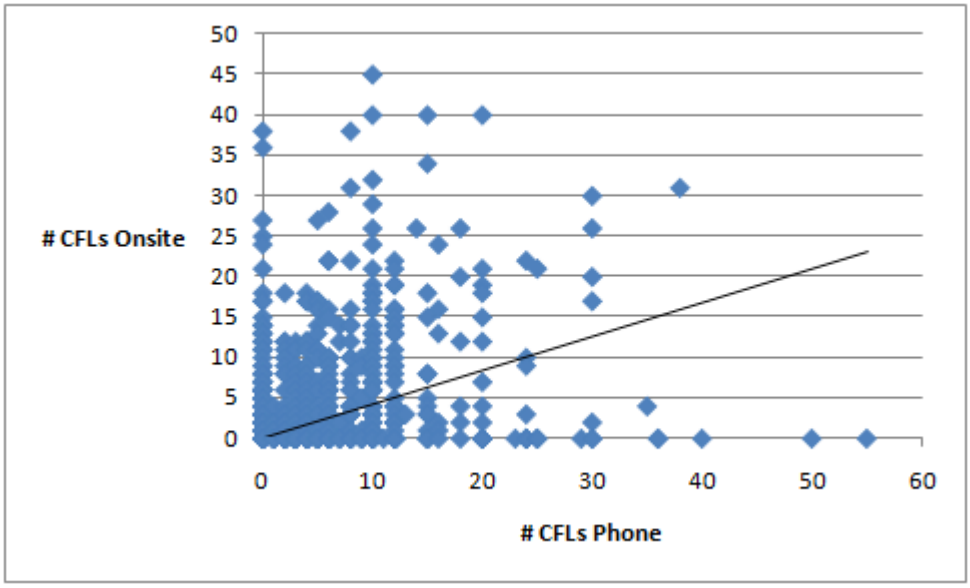


Figure 3-2: Difference between Telephone Survey Self-Reported and Onsite Verified CFL Purchases in 2008

(n=1,012; excludes outliers and respondents not familiar with or aware of CFLs; not available for CPUC states)

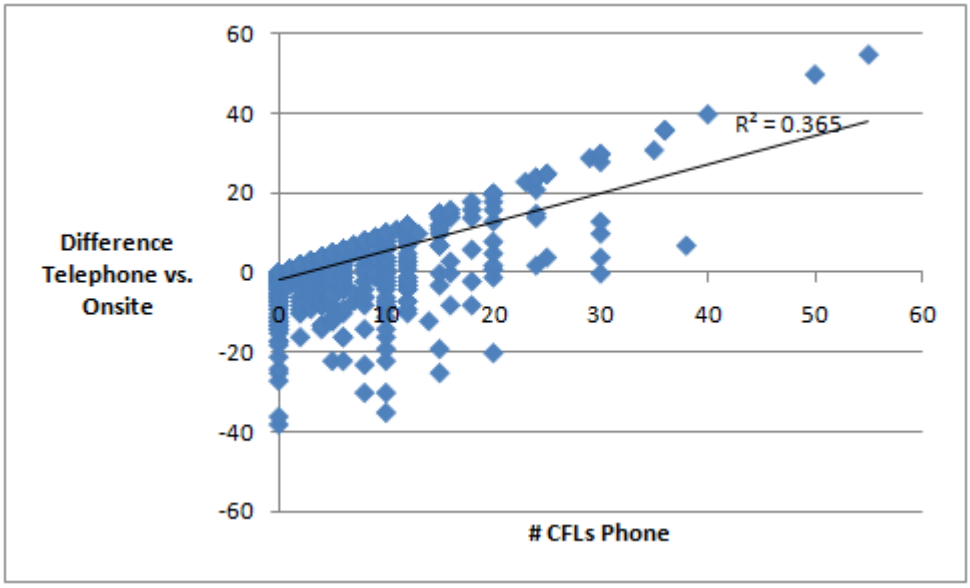


Figure 3-3: Telephone Survey Reported vs. Onsite Verified CFL Purchases in the Past Three Months

(n=1,255; excludes outliers and respondents not familiar with or aware of CFLs; intercept set equal to zero)

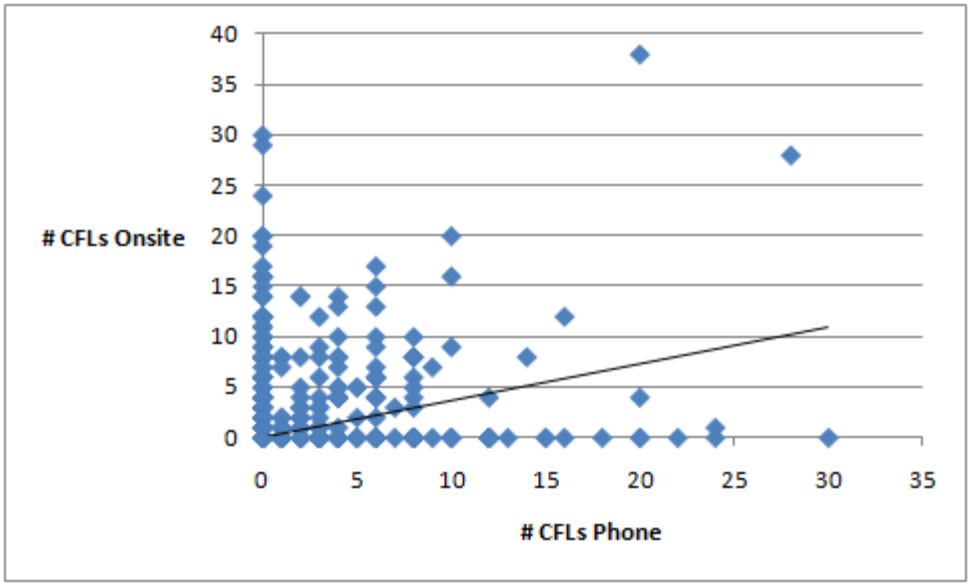


Figure 3-4: Difference between Telephone Survey Self-Reported and Onsite Verified CFL Purchases in the Past Three Months

(n=1,255; excludes outliers and respondents not familiar with or aware of CFLs)

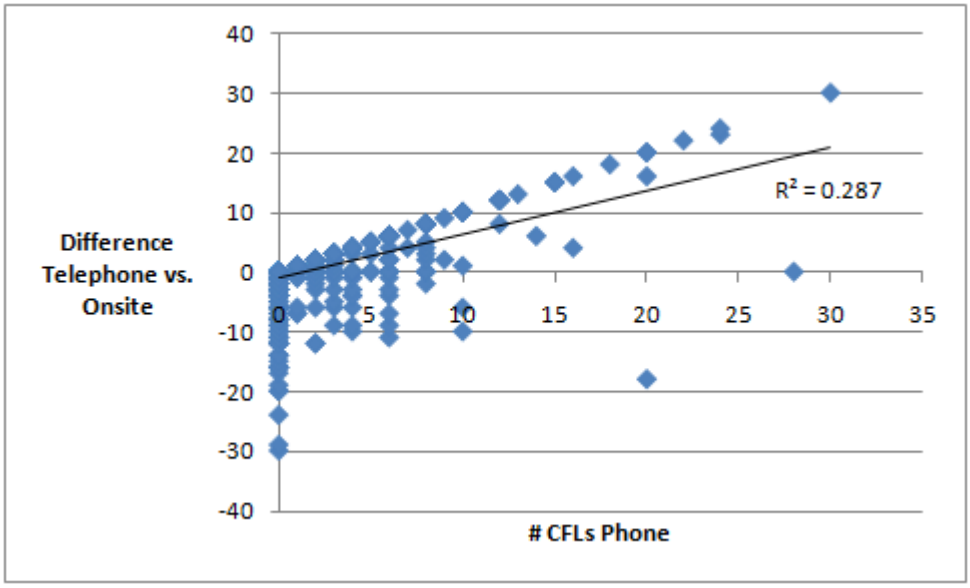


Figure 3-5: Telephone Survey Reported vs. Onsite Verified CFL Use in 2008

(n=1,261; excludes outliers and respondents not familiar with or aware of CFLs; intercept set equal to zero)

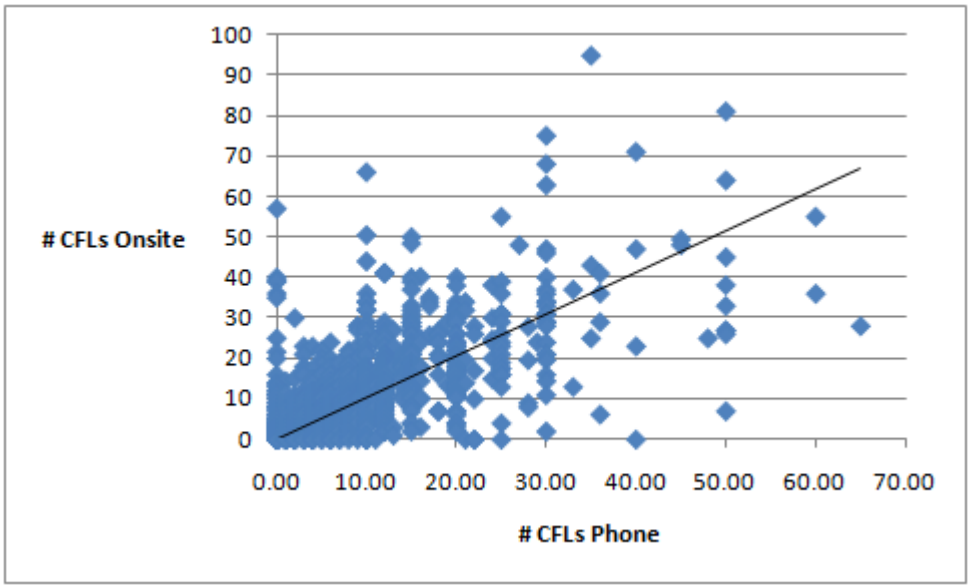
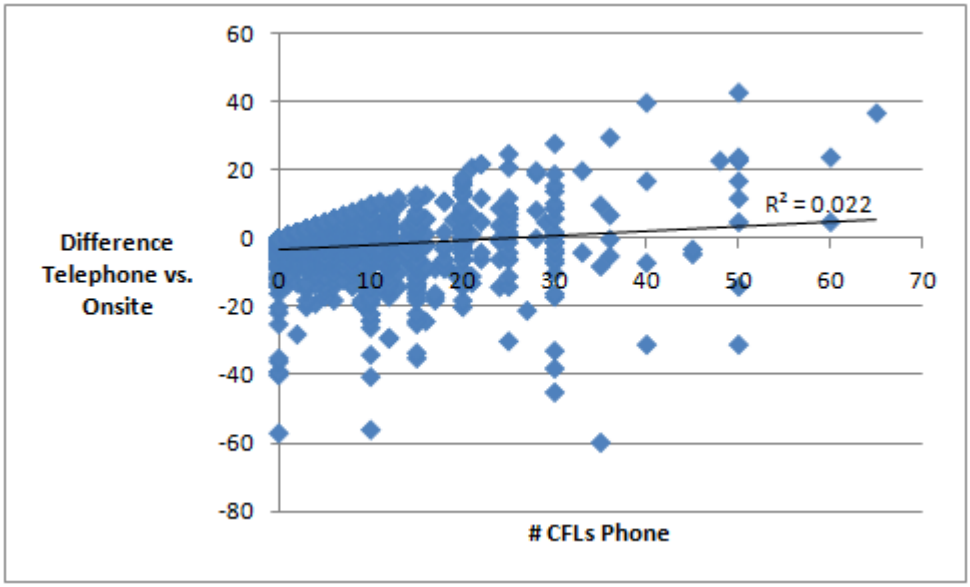


Figure 3-6: Difference between Telephone Survey Self-Reported and Onsite Verified CFL Use in 2008

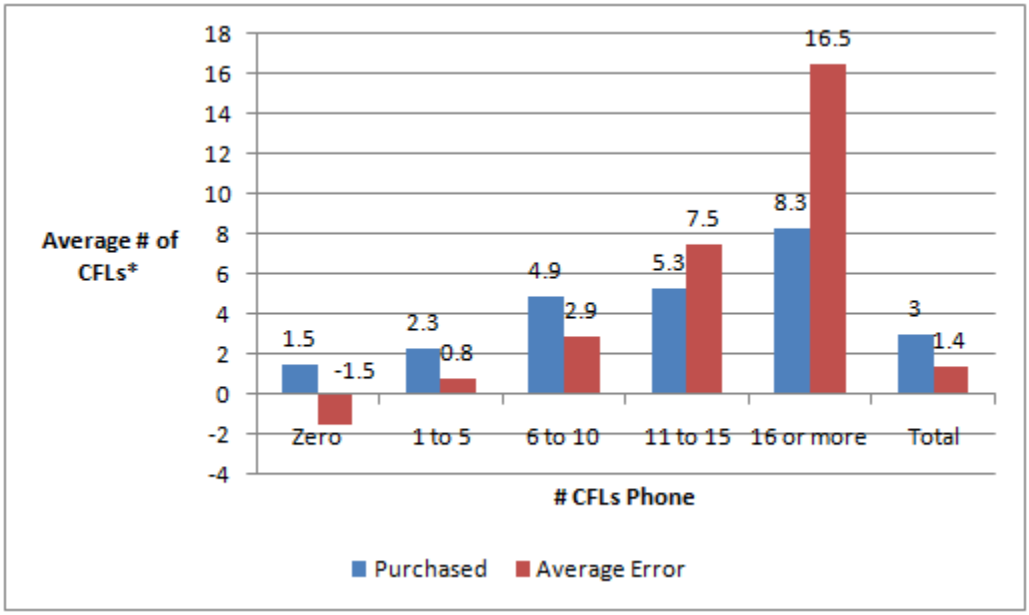
(n=1,261; excludes outliers and respondents not familiar with or aware of CFLs)



Given that Figure 3-1 through Figure 3-4 suggest at least some variation in accuracy by the number of CFLs telephone survey respondents reported as purchased, the MR Team compared the mean number of onsite verified purchases and average error in reporting (negative scores indicate underestimates in the telephone survey while positive scores indicate overestimates) by how many CFLs the respondent originally reported buying during the specified time period while answering the telephone survey. Those not aware of or familiar with CFLs and outliers have been removed from the analysis. Figure 3-7 displays these results for purchases in 2008. On average, those who said they purchased one to five CFLs showed the greatest accuracy in self-reports, actually purchasing an average of 2.3 CFLs and erring in their estimates by less than one CFL on average. Respondent who reported purchasing zero CFLs had actually purchased an average 1.5 CFLs. Those who reported purchasing more than five CFLs in the telephone survey showed the greatest levels of error, and the error increased with the number originally reported as purchased. Figure 3-8 demonstrates a similar pattern for purchases in the past three months, although the small number of people who purchased CFLs at all during this time period means that the results should be interpreted with caution.

Figure 3-7: Comparison of Telephone Survey Self-Reported and Onsite Verified CFL Purchases in 2008 by Number Self-Reported

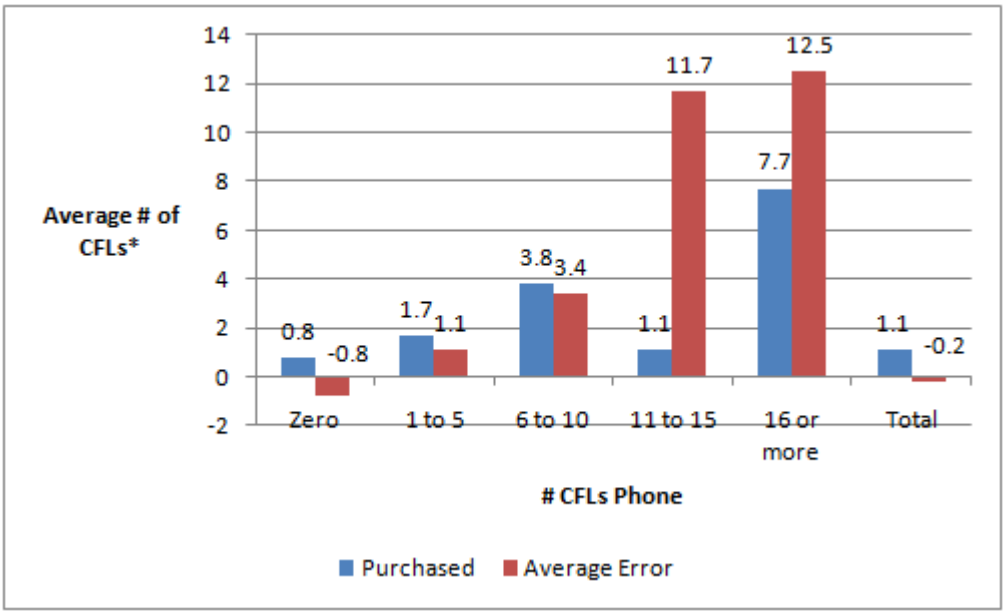
(n=1,011 but varies by number of CFLs purchased; excludes outliers and respondents not familiar with or aware of CFLs; not available for CPUC states)



* Blue bars indicate the average number of CFLs purchased as verified onsite; red bars indicate the average error in reporting between the telephone and onsite surveys (*i.e.* telephone estimate minus onsite estimate).

Figure 3-8: Comparison of Telephone Survey Self-Reported and Onsite Verified CFL Purchases in Past Three Months by Number Self-Reported

(n=1,252 but varies by number of CFLs purchased; excludes outliers and respondents not familiar with or aware of CFLs)



* Blue bars indicate the average number of CFLs purchased as verified onsite; red bars indicate the average error in reporting between the telephone and onsite surveys (*i.e.* telephone estimate minus onsite estimate).

3.5 Onsite Saturation: Current and Beginning of 2008

As described in Section 2.3, one of the key purposes of the onsite visits was to conduct a socket count in order to estimate CFL saturation. Table 3-5 summarizes the area-wide saturation rate (*i.e.,* all installed CFLs divided by all sockets in the state), the per household saturation rate (*i.e.,* the average percentage of sockets for each household), and the per household median saturation rate (*i.e.,* the mid-point in the percentage of sockets for each household). Although most programs compute saturation on an area-wide basis, recent work conducted by D&R International and the Department of Energy (DOE) has drawn attention to the fact that saturation rates may be strongly influenced by outliers—households with CFLs installed in a far higher percentage of sockets than normal.[43] This work compared the mean (the average) and median (the midpoint) saturation on a per-household basis, showing that the median is far lower than the mean nationally and in at least some program states as well. The discrepancy between the mean and median shows that a relatively few homes drive average saturation rates, while even more homes still have very few or no CFLs installed.

The results presented here add to this discussion. Similar to the D&R and DOE studies, we find that mean saturation area-wide and on a per-household basis are usually higher than the median (Colorado is the exception). However, we also find that program states have higher saturation rates by all measures—especially the median—and the median saturation is also closer to the mean in program states, suggesting less variation in saturation in program areas than in places without programs or with newer or moderate programs.[44] Program areas have succeeded in getting CFLs into a larger number of homes (penetration) and equalizing the percentage of sockets within those homes that contain CFLs (saturation) relative to non-program areas.

[43] See presentation delivered by Stephen Bickel in the panel "The Future of CFL Programs - Should We Eliminate Financial Incentives to Encourage Customers to Purchase Standard Compact Fluorescent Lamps?" at the 2009 International Energy Program Evaluation Conference held August 12-14, 2009 in Portland, Oregon; also in the presentation "The CFL Market: Long Way to Go, Little Time to Get There" as part of the AESP brownbag seminar *The CFL Market: Past, Present and Future*, September 24, 2009. See also the DOE publication *Big Results, Bigger Potential: CFL Market Profile* March 2009. Available at http://www.energystar.gov/ia/products/downloads/CFL_Market_Profile.pdf

[44] The high saturation rates in New York City are driven by the small size of homes there; New York City has fewer sockets per home than the other areas in the study, so just a few CFLs make a large difference in CFL saturation

Table 3-5: Current CFL Saturation by Area

(Collected during onsite visits; saturation = percentage of sockets)

State	Sample Size	Statewide	Per Household		
		Mean	Mean	Median	Difference
CA*	77	25.8	29.7	26.1	3.6
CO	70	18.6	23.6	20.7	2.9
CT	95	21.9	26.3	20.2	6.1
DC	97	13.4	14.1	3.5	10.6
GA*	62	16.2	16.0	5.6	10.4
IN	88	17.1	20.7	10.9	9.8
KS*	71	20.7	22.6	7.0	15.6
MD	57	15.5	18.6	12.4	6.2
MA	100	23.4	26.9	20.2	6.7
MI	86	18.5	19.8	12.5	7.3
NYS	203	18.2	21.0	14.8	6.2
NYC	100	22.4	24.0	21.1	2.9
OH	98	13.5	17.1	9.5	7.6
PA*	59	16.0	17.6	9.7	7.9
Houston	99	12.3	12.5	0.0	12.5
WI	82	20.9	23.7	17.6	6.1

* Adjusted to account for small screw and pin based sockets as described in Section 2.4.2.

Table 3-6 compares current saturation with the best approximation the data allow for saturation at the beginning of 2008. We developed this estimate by using the number of *currently installed* CFLs purchased *prior to 2008* as the numerator and the current number of total sockets as a denominator.[45] The approximation of saturation at the beginning of 2008 suggests a large increase in saturation in nearly all areas in the study, including some with longstanding CFL programs. The increase was smallest in Indiana (5.1%) and largest in Colorado (14.6%). Massachusetts had the highest saturation of all the areas at the beginning of 2008 (17%), but subsequently—and perhaps consequently—saw the second smallest increase in saturation (6.2%) over the course of 2008. Furthermore, three longstanding program areas (*i.e.* Connecticut, New York City, and Wisconsin) saw their saturation rates increase substantially since the beginning of 2008 and now exhibit saturation rates nearly as high as Massachusetts.

[45] This approach has three shortcomings. First, it suffers from respondent self-report error regarding the time of purchase. Second, the approach assumes that none of the currently installed CFLs purchased after 2008 had replaced CFLs in the same socket. Finally, the method does not account for changes in the number of sockets in the home that may have occurred after the beginning of 2008. Therefore, the evaluation team stresses that the approximation of saturation of 2008 is most accurately portrayed as *the percentage of sockets currently filled with CFLs purchased prior to 2008*, but for ease of discussion we will refer to it as saturation at the beginning of 2008. It should also be noted that these data are not available for the four CPUC states.

Table 3-6: Comparison of Current Saturation and Approximate Saturation at the Beginning of 2008*

(Collected during onsite visits; saturation = percentage of sockets)

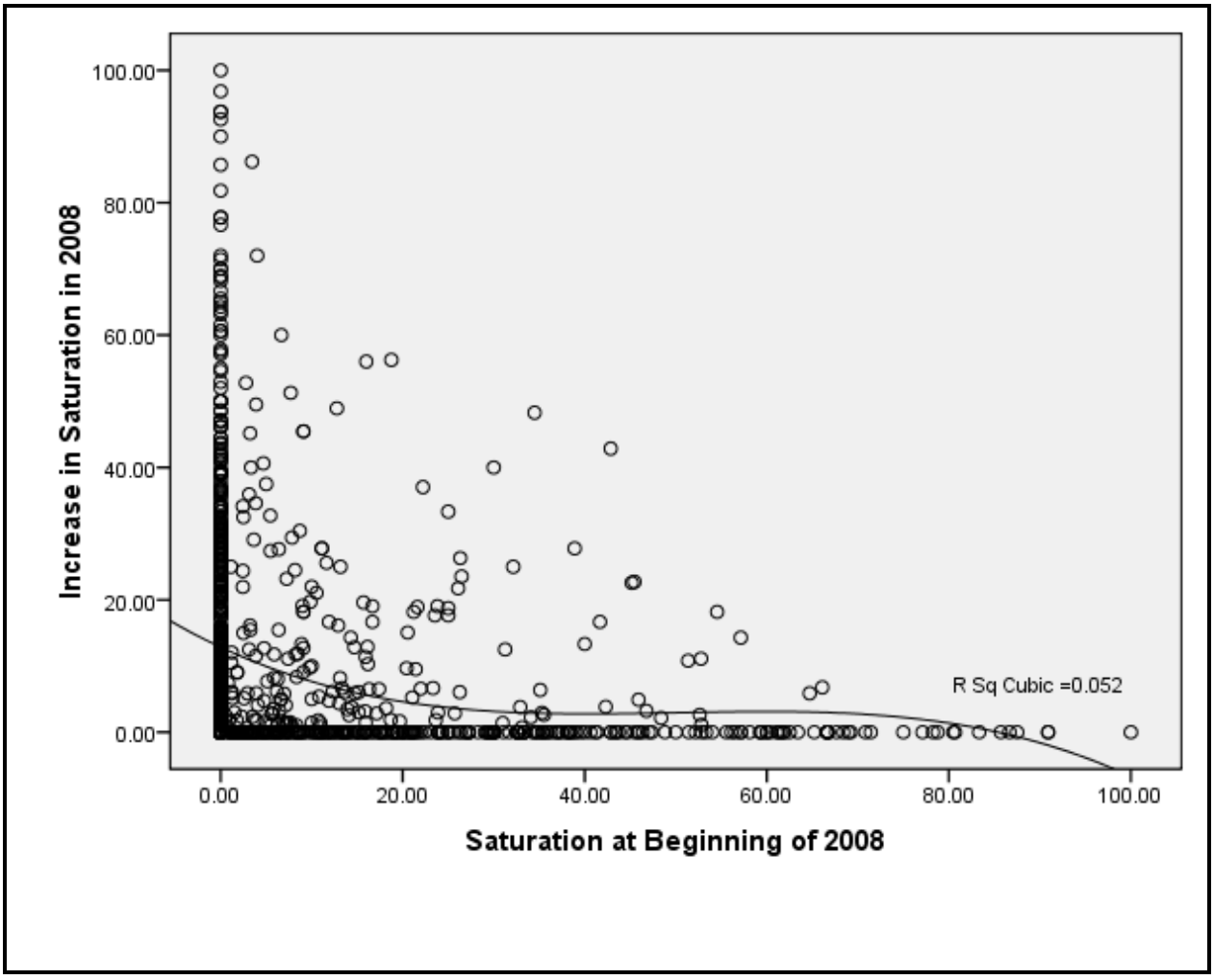
State	Sample Size	Area-wide		
		Current	Beginning of 2008	Increase since Jan. 08
CO	66	18.6	4.0	14.6
CT	95	21.9	11.4	10.5
DC	91	13.4	5.3	8.1
IN	88	17.1	12.0	5.1
MD	57	15.5	7.3	8.2
MA	100	23.4	17.2	6.2
MI	59	18.5	7.0	11.5
NYS	169	18.2	8.8	9.4
NYC	92	22.4	8.5	13.9
OH	78	13.5	3.9	9.6
Houston	90	12.3	3.2	9.1
WI	82	20.9	9.8	11.1

* Not available for the CPUC states

The scatterplot in Figure 3-9 compares the proxy variable for saturation at the beginning of 2008 with the change in household saturation in 2008. The graph suggests that increases in saturation followed a non-linear function. Increases in saturation were highest in the households that had saturation of zero percent at the beginning of 2008. The increase leveled off for households that had saturation between about 30% and 70% at the beginning of 2008. Not surprisingly, increases in saturation were very rare for households that had 70% or more of their sockets filled with CFLs at the beginning of 2008.

Figure 3-9: Comparison of Saturation at the beginning of 2008 and the Increase in Saturation in 2008 – Onsite*

(n = 1,067, excludes the CPUC states and Colorado as well as outliers)



* Curvilinear line and explained variance based on a cubic function, not a linear one

3.6 Demographic Variation in Current CFL Use and 2008 Purchase Behavior – Onsite Verified Data

Table 3-7 to Table 3-12 summarize demographic, housing, and other characteristics of respondents by the number of CFLs currently in use or purchased in 2008 as verified in the onsite surveys. These tables contain a great deal of information, so we highlight a few key findings here.[46]

In many ways, CFL use and purchases vary in predictable ways. Respondents living in apartments, who rent, and who do not directly pay their electricity bill were less likely to use CFLs when compared to homeowners living in single family homes who paid their electricity bill directly. Similarly, lower-income households, those in which the respondent did not self-identify as white, and in which the primary language spoken was not English were less likely to use CFLs. Finally, households that currently use more CFLs or purchased a greater number in 2008 were also more likely to have used CFLs for a longer period of time.

A few of the findings, however, are less expected. Perhaps the most striking is the small percentage of respondents in *all* categories who reported purchasing CFLs in 2008; in no single demographic group did a majority of respondents purchase CFLs in 2008. In short, participating households are using CFLs, but few actually bought them in 2008. Another unexpected finding is the fact that households in which a female answered *the telephone survey* had fewer CFLs in use and purchased in 2008 *as verified in the onsite survey* than in households in which men answered the survey. We explored potential reasons for this and found that women who responded to the telephone survey were more likely than men to be low income or renters or to identify their race as non-white—all correlates of lower CFL awareness, use, and purchases as stated above—suggesting that these factors and not gender drives the result. This same group was slightly more likely to agree to the onsite, perhaps because of the substantial incentives.[47]

Another finding that requires more explanation is that households were less likely to use or buy CFLs in counties that leaned more heavily Democratic in the 2008 election according to the partisan voting index for 2008 (PVI08). However, it could also point to lower CFL use in city centers, which tend to lean strongly Democratic but also to have larger concentrations of the types of households that are least likely to use CFLs. The fact that households in nonmetropolitan counties were more likely to use CFLs and to use them in large numbers provides some evidence to support the latter hypothesis.

[46] See Appendix C for a similar set of tables for telephone survey reported CFL use and purchases.
[47] While this may create a slight bias in the onsite sample, such households still made up a small minority of all that took part in the household and actually ensured that we had ample representation of this hard-to-reach population.

Table 3-7: Current CFL Use by Key Housing Characteristics – Onsite Survey

Variable	Sample Size	Number of CFLs				
		Zero	1 to 5	6 to 10	11 to 15	16+
Type of Home						
Single Family Detached	978	18%	26	17	13	26
Single Family Attached	148	21%	26	26	14	13
Apartment 2-4 units	86	34%	32	15	15	4
Apartment 5+ units	179	38%	36	18	4	4
Mobile/Other	48	15%	26	9	30	19
Homeownership						
Own	1080	17%	26	17	14	27
Rent	360	34%	34	18	10	5
Home Size						
Less than 2,000 sqft	759	27%	31	19	11	12
2,000 to 3,999 sqft	582	17%	26	17	13	27
4,000 sqft or more	87	14%	24	14	19	28
Who Pays Electric Bill						
Pays Bill Directly	1082	21%	29	18	12	20
Included in Rent/Fee	71	41%	36	16	7	1

Table 3-8: 2008 CFL Purchases by Key Housing Characteristics – Onsite Survey

Variable	Sample Size	Number of CFLs				
		Zero	1 to 5	6 to 10	11 to 15	16+
Type of Home						
Single Family Detached	780	67%	14	8	6	6
Single Family Attached	127	57%	15	13	7	8
Apartment 2-4 units	77	77%	14	6	2	2
Apartment 5+ units	153	76%	14	8	1	1
Mobile/Other	33	67%	15	3	9	6
Homeownership						
Own	878	65%	15	8	5	7
Rent	293	74%	13	7	4	1
Home Size						
Less than 2,000 sqft	685	71%	14	8	4	3
2,000 to 3,999 sqft	437	63%	15	8	7	7
4,000 sqft or more	45	68%	18	3	5	8
Who Pays Electric Bill						
Pays Bill Directly	1082	67%5	15	8	5	5
Included in Rent/Fee	71	84%	10	3	2	1

Table 3-9: Current CFL Use by Key Demographic Characteristics – Onsite Survey

Variable	Sample Size	Number of CFLs				
		Zero	1 to 5	6 to 10	11 to 15	16+
Primary Language						
English	1,396	23%	29	18	12	19
Another language	44	28%	28	12	22	12
Self-Identified Race						
White	1,064	20%	28	18	13	22
Another race(s)	373	36%	31	15	10	8
Education						
Beyond high school	1,021	19%	27	18	13	22
High school or less	403	30%	31	16	10	13
*Income COL Adjusted**						
Less than $30,000	399	31%	31	18	10	9
$30,000 or higher	828	17%	28	18	13	25
Gender						
Male	657	18%	27	19	12	23
Female	787	27%	29	17	12	16
County Metropolitan Status						
Metropolitan	1,233	24%	29	17	12	18
Non-metropolitan	203	17%	22	18	16	27

* Adjusted for the cost of living

Table 3-10: 2008 CFL Purchases by Key Demographic Characteristics – Onsite Survey

Variable	Sample Size	Number of CFLs				
		Zero	1 to 5	6 to 10	11 to 15	16+
Primary Language						
English	1,150	68%	14	8	5	5
Another language	21	74%	11	7	4	4
Self-Identified Race						
White	860	68%	14	8	5	6
Another race(s)	216	78%	12	7	2	1
Education						
Beyond high school	816	66%	16	7	6	6
High school or less	340	74%	11	9	3	3
*Income COL Adjusted**						
Less than $30,000	346	75%	12	7	4	2
$30,000 or higher	652	65%	16	9	5	6
Gender						
Male	531	66%	16	8	4	6
Female	644	70%	13	7	5	4
County Metropolitan Status						
Metropolitan	165	68%	15	8	5	5
Non-metropolitan	1,010	70%	9	9	5	7

* Adjusted for the cost of living

Table 3-11: Average Values for Key Variables by Number of CFLs Currently in Use – Onsite Survey

	Number of CFS									
	Zero		1 to 5		6 to 10		11 to 15		16+	
Variable	n	Mean	n	Mean	n	Mean	n	Mean	n	Mean
Household size	262	2.7	376	2.5	256	2.8	175	3.0	315	3.0
County unemployment rate	278	8.1	390	8.6	259	8.5	186	8.4	323	8.5
Years Using CFLs	278	0.5	393	1.6	262	2.3	187	2.8	324	3.3
Density of Wal-Marts	278	4.0	390	4.3	259	4.5	186	4.0	323	4.9
Density of Other Box Stores	278	2.6	390	2.7	259	2.6	186	2.8	323	3.1
Density of All Box Stores	278	6.6	390	7.0	259	7.1	186	6.7	323	8.0
Partisan Voting Index*	278	-17.7	390	-16.3	259	-14.4	186	-7.5	323	-6.7

* The more negative the score, the more heavily democratic leaning the area

Table 3-12: Average Values for Key Variables by Number of CFLs Purchased in 2008 – Onsite Survey

	Number of CFS									
	Zero		1 to 5		6 to 10		11 to 15		16+	
Variable	n	Mean	n	Mean	n	Mean	n	Mean	n	Mean
Household size	760	2.6	174	2.4	98	2.8	58	3.0	68	2.9
County unemployment rate	771	8.9	176	8.7	100	9.2	58	8.6	70	9.0
Years Using CFLs	771	1.6	176	2.5	100	2.5	58	2.6	70	2.8
Density of Wal-Marts	771	3.9	176	3.8	100	4.2	58	3.4	70	4.2
Density of Other Box Stores	771	2.7	176	2.8	100	2.6	58	2.4	70	2.9
Density of All Box Stores	771	6.6	176	6.6	100	6.8	58	5.8	70	7.1
Partisan Voting Index*	771	-16.7	176	-17.7	100	-16.1	58	-14.3	70	-9.7

* The more negative the score, the more heavily democratic leaning the area

4 Model Choice, Development, and Analysis

The MR Team analyzed the telephone and onsite survey data using a variety of statistical modeling techniques. This section briefly describes the choice of the various procedures and summarizes the development of the models presented in Section 5.

4.1 Exploring Correlates of Being a CFL User or Purchaser

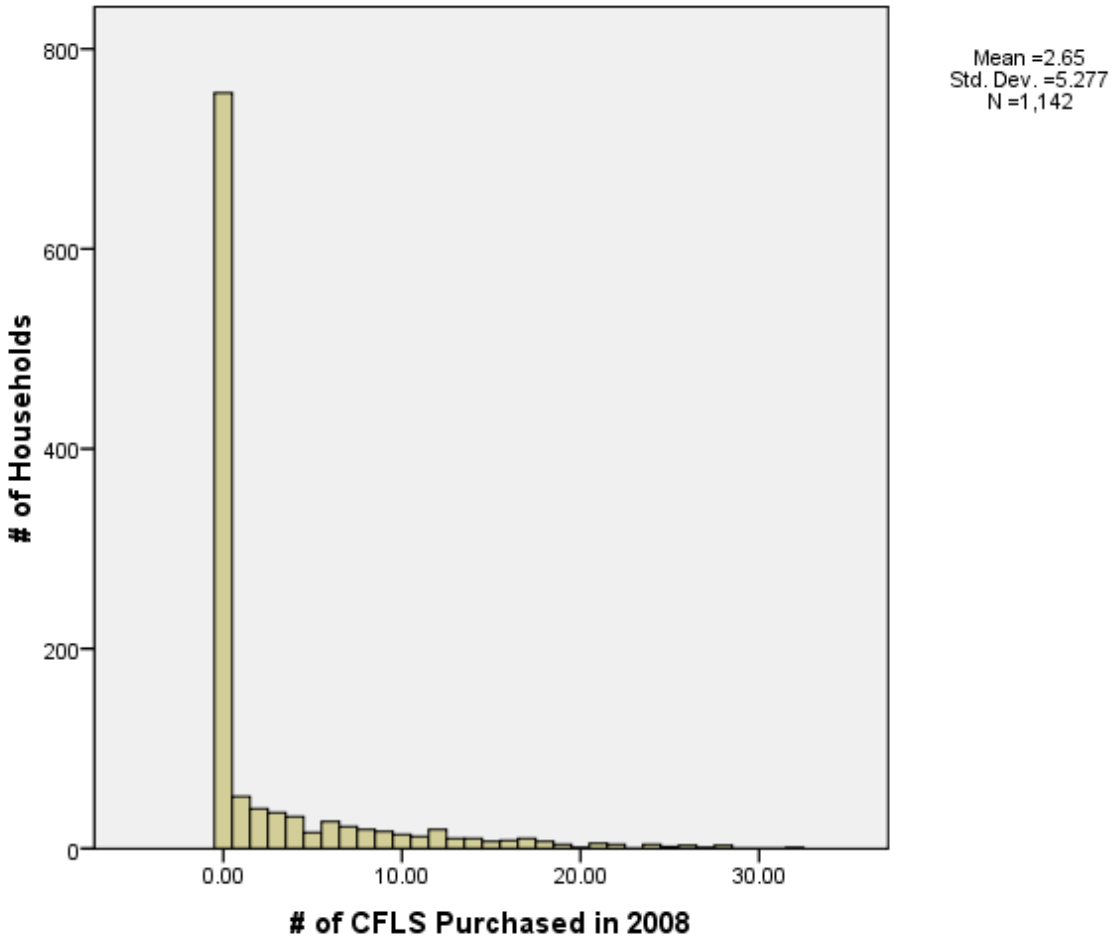
Although the main purpose of the multistate modeling effort was to explain *how many* CFLs households purchase or use as well as their saturation rates, the MR Team believed it was important to explore the factors that contribute to whether or not a household uses or purchases *any* CFLs. In order to examine these factors, we first transformed the 2008 purchase and use data from counts of the number of bulbs into two dichotomous variables—one for buyers and one for users in which the non-buyers and non-users were coded as zero and buyers and users as one. We entered the dichotomous variables into logistic regression models—which are used to examine dichotomous outcomes—as the dependent variables. While these models cannot be used to estimate NTG, cost effectiveness, or electricity savings, they provide additional insight into what drives CFL use and purchases.

4.2 Modeling CFL Purchases, Use, and Saturation

The MR Team considered using a number of different statistical techniques to identify the net effect of CFL programs and other variables on CFL purchases, use, and saturation. The fact that we have a mixture of categorical and continuous independent variables suggests the use of ANCOVA or a regression model (after transforming the categorical data into dichotomous variables as described above). We rejected ANCOVA and ordinary least squares (OLS) regression as analysis procedures to model counts of CFL purchases and use primarily because of "right skew" in our dependent variables, as shown below for onsite reported 2008 CFL purchases (Figure 4-1). In particular, many households tend to have zero or few CFLs installed or have made zero or few recent CFL purchases; rarely do they have numerous CFLs installed. In contrast, ANCOVA and OLS assume a normal or bell-shaped curve in the dependent variable (*i.e.*, CFLs installed or recently purchased or socket saturation), and a common way in OLS to deal with such right skewed data is to take their square or cubic root. Many of our data points, however, are at zero; their square roots and cubic roots are still zero, and therefore, the procedure does not resolve the right skew. The implication is that we cannot use ANCOVA or OLS to model CFL use and purchases. With this knowledge, the MR Team searched for statistical distributions and related analysis techniques that more accurately matched the data. The negative binomial regression model (NBRM) is one of the most common methods of analyzing count data (*.e.g.*, the number of CFLs) with many cases falling at zero and with a fair degree of variability

in the data.[48] Note that the NBRM is a non-linear procedure and its interpretation differs from that of OLS models, as we address below in Section 5.

Figure 4-1: Histogram of Onsite Reported CFLs Purchased in 2008



Similar to use and purchase, the data for CFL saturation also suffer from right skew. However, because they represent continuous proportion data, CFL saturation cannot be analyzed using NBRM which applies only to count data. The MR Team explored other procedures and data transformations to confront the right skew in the saturation data, but we found none that fit our conditions. Therefore, the saturation models presented in this report rely on OLS.[49]

[48] Long, J.S and J. Freese (2006) *Regression Models for Categorical Dependent Variables Using Stata*. Stata Press: College Station, TX. Elhai, J.D., P.S. Calhoun, and J.D. Ford "Statistical Procedures for Analyzing Mental Health Services Data." *Psychiatry Research* 160(2):129-236.

[49] In considering the best method to model market share we were limited in that Logit, Poisson, NBRM and Tobit models either required dichotomous or count data or "normalcy" in the dependent variable for the model to estimate

4.3 Model Development and Analysis

The MR Team initially ran models by entering the composite program effect as the sole independent variable to explain CFL use, saturation, and purchases in order to understand the simple statistical relationship between them, and then repeated this effort with the separated cumulative effect and 2008 program variables. The purpose of the modeling effort, however, is to identify the program effect after controlling for other factors that may also influence CFL use and purchases. Therefore, the MR Team proceeded by adding other variables into the equations—including ones that captured respondent demographics, the economic conditions in the state, the concentration of box stores, length of time the respondent has used CFLs, CFL storage, and CFL use prior to the purchase period under consideration. In all models, we drew the demographic data from respondent self-reports in the telephone survey; however, when exploring the relationship between CFL use, saturation, and purchases, we pulled the CFL data from either the telephone or the onsite survey data. The MR Team excluded variables found to be excessively collinear with other variables in the model or that had little statistical effect on CFL use, saturation, and purchases.[50] The models presented in Section 5 are parsimonious in that every variable in them has a statistically significant net effect on CFL use or purchases (at the 0.10 level of significance); removing any of the variables reduces the predictive capability of the model. In short, they represent the best models yielded by the analyses.[51]

The MR Team excluded from all analyses the Colorado respondents identified through retail coupon tracking databases; we also excluded outliers from all states from the NBRM 2008 purchase model, as it was the model used to predict NTG, and these outliers represent CFL enthusiasts, having far more CFLs in their state than the usual household in the state. Potential outliers were identified using the boxplot approach, but the MR Team only removed those that differed substantially from the respondent with the next lowest reported 2008 purchases in the state.

reliably. Our data met none of these conditions, so we decided that OLS regression would most appropriate to model market share despite that fact that the variable is a rate and has a heavy right skew.

[50] Collinearity was determined by the tolerance statistic and the variance inflation factor.

[51] The approach used for the logistic regression models was similar, although some of our analyses involved developing separate models for households who used CFLs prior to 2008 and those who first used CFLs or still did not use them in 2008 in order to determine if the same factors drive CFL purchases among longer term and newer CFL users.

5 Results and Implications for Total Net Impact

The MR Team ran multiple models using different analysis techniques in our attempts to understand the effects of CFL programs on 2008 CFL purchases, use, and saturation. We explore the results of these models and their implication for the total net impact estimate below. Given what the MR Team believes to be their greater level of reliability, we prioritize findings from models drawing on purchase, use, and saturation data collected during the onsite visits. See Appendix D for models based solely on telephone survey data.

Because the models are not typically linear in nature, their interpretation is not immediately intuitive. As with OLS regression, the logistic and NBRM techniques produce "coefficients" for each independent variable. In OLS, the coefficient is the amount by which the dependent variable will change given a one unit change in the independent variable. In nonlinear models, the direct interpretation of the coefficient is the log likelihood of the independent variable affecting a change in the dependent variable increase. To convert the coefficient—commonly denoted as 'b'—into a form that is more user-friendly requires two steps. The first is to exponentiate the 'b' by raising the natural log to the 'b' power (commonly seen as $e^{\wedge b}$ or e^{b}), giving us a value known as the factor change for the dependent variable. The factor change still is not directly applicable to predicting the dependent variable, so one takes the second step in making the coefficient easier to interpret by subtracting one from the factor; this yields what we have termed the 'impact score'. The impact score can be interpreted multiplicatively—each increase (or decrease) in the independent variable program brings about an increase (or decrease) in the dependent variable by the amount of the impact score.

5.1 Logistic Models Exploring CFL Use and Purchase vs. Non-Use and Non-Purchase

To explore the differences between who did and who did not purchase CFLs in 2008, we created a dummy variable, with 2008 CFL purchasers scored with a one, and non-purchasers scored with a zero. We ran three different logistic regression models to explain the likelihood of being a CFL purchase in 2008: one for all respondents (full set)[52], the second for respondents that used at least one CFL at the beginning of 2008 (users), and the last for respondents who did not use CFLs prior to 2008 (non-users). The composite program variable was *not* a significant predictor of use when looking at all respondents. It was a significant predictor or use in both the users and non users' models, but the direction of the relationship differed between the models. Among prior

[52] The respondents in the full set models were further restricted by their responses to the questions dealing with the predictor variables. If the respondent refused to answer a question or said that the question was not applicable to their situation they were given no score for their response and therefore can not be measured and were not included in the model.

users, the composite program score was *negatively* related to the likelihood of a person purchasing CFLs, while among non-users the presence of a program *increased* the likelihood of a respondent being a purchaser. In short, program activity had little impact on the purchase behavior of prior users, *but programs were still getting non-users to try CFLs*. Likewise, saturation at the beginning of 2008 was negatively related to the likelihood of purchasing CFLs in 2008, likely because households with higher levels of saturation had fewer sockets left to fill with CFLs in 2008. The only factors positively related to CFL purchases in the prior users model were the concentration of Wal-Mart stores at the state level and having a college degree or higher level of education.

Table 5-1: Likelihood of being a 2008 CFL Purchaser by Prior CFL Use

	Full Set		Users		Non-users	
	Coef.	Impact	Coef.	Impact	Coef.	Impact
Composite program	n/a	n/a	-0.222	-0.199	0.257	0.293
2008 County Partisan Voting Index	-0.007	-0.006	-0.022	-0.022	0.010	0.010
Wal-Mart	0.102	0.108	0.184	0.202	n/a	n/a
County unemployment rate	n/a	n/a	-0.117	-0.110	0.078	0.081
Self-reported as white	0.448	0.565	n/a	n/a	0.643	0.902
Years using CFLs	0.091	0.095	n/a	n/a	n/a	n/a
Utility bill paid directly	0.684	0.983	n/a	n/a	n/a	n/a
College degree or higher	n/a	n/a	0.666	0.946	n/a	n/a
2008 CFL saturation	n/a	n/a	-0.026	-0.025	n/a	n/a
Female respondent	n/a	n/a	n/a	n/a	-0.459	-0.368
Constant	-2.385	n/a	-0.320	n/a	-1.601	n/a
Sample size	1,078		472		513	
R^2	3%		14%		11%	

The MR Team next explored what drives CFL saturation by creating a dichotomous variable for 2008 saturation and one for current saturation. In both, respondents having saturation greater than zero were coded as one, and those with saturation of zero were coded as zero. We then developed three models of the likelihood of having of saturation using logistic regression—the first for 2008 saturation (which is not available for the CPUC states), the second for current saturation excluding the CPUC states for comparability to the 2008 saturation model, and the third for current saturation including the CPUC states. Three variables—the composite program variable, length of CFL use, and the county unemployment rate—consistently predicted the likelihood that a respondent had CFL saturation above zero. However, the direction of the unemployment rate varied across models suggesting that living in an area with high unemployment was associated with lower levels of saturation, but, currently, households in areas with high unemployment rates had higher saturation. The only other variable to show up in more than one model was homeownership, which had a positive effect on the likelihood of having saturation above zero in the models that excluded the CPUC states but not in the model that included the CPUC states.

Table 5-2: Likelihood of having Saturation Greater than Zero: 2008 and Current

	2008 Saturation		Current Saturation, no CPUC states		Current Saturation, includes CPUC states	
	Coef.	Impact	Coef.	Impact	Coef.	Impact
Composite program	0.09	0.10	0.18	0.20	0.17	0.19
Years using CFLs	0.18	0.20	0.60	0.83	0.62	0.86
Homeownership	0.54	0.72	0.48	0.61	n/a	n/a
Self reported as White	0.32	0.38	n/a	n/a	n/a	n/a
County unemployment rate	-0.12	-0.11	0.13	0.14	0.13	0.14
Metropolitan county	-0.52	-0.41	n/a	n/a	n/a	n/a
Female respondent	n/a	n/a	n/a	n/a	-0.27	-0.24
Concentration of box stores	n/a	n/a	n/a	n/a	0.03	0.03
Total sockets in home	n/a	n/a	n/a	n/a	0.01	0.01
Home Size	n/a	n/a	0.40	0.49	n/a	n/a
Constant	0.91	n/a	-1.34	n/a	-1.09	n/a
Sample size	1,314		1,151		1,411	
Pseudo R^2	9%		17%		18%	

There are two major conclusions to be drawn from the logistic models. First, different factors drove new CFL users and prior CFL users to purchase CFLs in 2008. Second, the factors that explain CFL saturation changed from the beginning of 2008 through the "current" time period associated with data collection in each area. Both of these findings support the hypothesis that the CFL market is changing. A wider variety of households in a greater diversity of places are using CFLs. Programs that support CFLs are bringing in new users and still boost CFL saturation, but other factors also go far in explaining why people purchase and use CFLs. The

next two sections explore in more detail what drives the number of CFLs people purchase and use and the level of their CFL saturation.

5.2 Bivariate Models Results of Program Impact on Number of CFLs in Use and Purchased and on CFL Saturation

Table 5-3 summarizes the *bivariate* models in which we explored the relationship between the composite program variable and current saturation, current use, CFL purchases in 2008, and CFL purchases in the past three months as measured onsite. We also examined these same relationships with the disaggregated program components, but the results were very similar to those for the composite variable so we only show its effects here.[53] The data in Table 5-3 show a clear and consistent positive relationship between current onsite saturation and the composite program using OLS. The relationship suggests that current saturation increases by 1.30% for every increase in the program score for a state. The remaining models in Table 5-3 rely on NBRM. These models find a small but significant relationship between onsite verified 2008 purchases and the composite program variable. There are no significant bivariate program effect on onsite verified purchases in the past three months.

Table 5-3: Bivariate Composite Program Effect Models

Dependent Variable	Sample Size	Data Source	Coef.	90% Confidence Interval		Impact Score
				Low	High	
Current Saturation	1,374	Onsite	1.30	0.75	1.85	*
Purchase 2008	1,073	Onsite	0.08	0.04	0.13	0.09
Purchase Past 3 Mos.	1,336	Onsite	Program effect was not statistically significant			
Current Use	1,374	Onsite	0.05	0.03	0.07	0.05

*Ordinary least squares regression was used to model program effect, so the impact on purchases is captured by the regression coefficient.

5.3 Advanced Model Results for Program Impact on Number of CFLs in Use and Purchased and on CFL Saturation

The MR Team also ran more advanced models that incorporated other independent variables (Table 5-4 through Table 5-8).[54] After controlling for these other variables, the composite

[53] One reviewer suggested that we set the intercepts equal to zero. Although it is true that CFL purchases and use cannot drop below zero, the use of the non-linear NBRM means that we cannot set intercepts (the point at which the line crosses the y-axis) because this violates how non-linear functions work. However, we have followed the reviewers' advice and set the intercept equal to zero in saturation models, which rely on OLS regression.

[54] As with the bivariate models, we also tested the models below with the disaggregated program components (*i.e.,* rating of prior program strength and 2008 program activity), and the results were very similar. Therefore, we only present the results for the composite program in this section.

program variable had significant and positive effects on 2008 purchases, current saturation, and current use. The approaches failed to find a statistically significant program effect on purchases in the past three months, most likely reflecting the fact that the "three months" under question differed across states and very few people in any state actually reporting purchasing CFLs during the time period.

More specifically, Table 5-4 presents the 2008 purchase model from which the MR Team derives the estimate of total net impact presented in Section 5.4. The CPUC states were not included in the development of this model because 2008 purchase data were not collected during the onsite surveys. However, we were able to predict 2008 CFL purchases and total net impact for the California ULP programs from the survey data, as described in more detail in Section 5.4.

This demonstrates that the program activity has a positive impact on 2008 CFL purchases, as does the number of years the respondent reported using CFLs. The model demonstrates that the program activity has a positive impact on 2008 CFL purchases, as does the number of years the respondent reported using CFLs and number of sockets in the home. In addition to these CFL related variables, a household's purchases of CFLs increases with each additional person living in the home and when the respondent is white. The dummy variable created to capture responding in the fall also has a positive effect on CFL purchases in 2008, indicating that those answering the survey at the very end of 2008 or beginning of 2009 provided higher estimates of 2008 purchases than those responding in the late Spring and early Summer of 2009.

Table 5-4: Best Fit 2008 Purchase Model – Onsite

Variables	Coefficient	90% Confidence Interval		Impact Score
		Low	High	
Composite Program	0.11	0.06	0.16	0.11
Years using CFL	0.10	0.06	0.14	0.10
Number of Sockets in Home	0.01	0.00	0.01	0.01
Number of Persons in Household	0.10	0.02	0.18	0.10
Self reported as White	0.42	0.09	0.74	0.52
Conducted During Fall Season	0.60	0.33	0.86	0.82
Constant	-0.79	-1.21	-0.38	n/a

* Sample size = 1,034 and pseudo R^2 = 1%.

The model presented in Table 5-4 was the closest predictor of observed 2008 purchases among the various models the team considered. However, given the data presented in Section 3.5 that pointed to a likely connection between 2008 purchases and prior saturation, an alternative 2008 purchase model that includes saturation was developed in order to demonstrate the importance of saturation on 2008 CFL purchases (Table 5-5). The composite program score, years using CFLs, race of the respondent and number of sockets in the home were common predictors for the 2008 purchase models presented in Table 5-4 and Table 5-5. As the data in Section 3.5 suggested,

saturation had a significant *negative* effect on 2008 CFL purchases, indicating that the higher a household's CFL saturation rate at the beginning of 2008 the less likely it was to purchase CFLs during 2008.

Table 5-5: 2008 Purchase Model with Saturation*

Variables	Coefficient	90% Confidence Interval		Impact Score
		Low	High	
Composite Program	0.06	0.01	0.11	0.07
Years using CFL	0.13	0.08	0.18	0.14
CFL Saturation at beginning of 2008	-0.03	-0.04	-0.02	-0.03
Self reported as White	0.43	0.04	0.81	0.53
Number of Sockets in Home	0.01	0.00	0.01	0.01
2008 County Partisan Voting Index	-0.01	-0.01	0.00	-0.01
Constant	-0.17	-0.53	0.20	n/a

* Sample size = 950 and pseudo R^2 = 1%.

The three month purchase model fails to find a statistically significant relationship with program activity, most likely due to the differences in survey timing and the very small number of people who purchased CFLs in the three months under question (Table 5-6). Significant positive predictors of three month purchases instead included years using CFLs (removing this variable does not make the program activity variable become significant), whether the respondent was a homeowner and the unemployment rate in the county of residence. From a methodological standpoint, the MR Team believes that people are more likely to provide accurate self-reports of their three month purchases than when asked about a full year; but this study also suggests that too few households actually purchased in the time period to draw meaningful evaluation conclusions about purchases in the past three months.

Table 5-6: Best Fit Three Month Purchase Model – Onsite*

Variables	Coefficient	90% Confidence Interval		Impact Score
		Low	High	
Years using CFL	0.12	0.05	0.18	0.13
Homeowner	0.63	0.15	1.10	0.87
County Unemployment Rate	-0.08	-0.14	-0.03	-0.08
Constant	-0.06	-0.74	0.61	n/a

* Sample size=1,394 and Pseudo R2 = 1%.

As in the 2008 purchase models (Table 5-7 and Table 5-5) there was a positive relationship between CFL program and years using CFLs on saturation. Moreover, two additional variables entered the saturation model: the change in the county unemployment rate in 2008 and whether the household paid its electricity bill directly. The change in the county unemployment rate was positively associated with saturation, indicating that persons living in counties whose unemployment rates increased the most also had higher rates of CFL saturation. Likewise, households that paid their electricity bills had higher rates of saturation.

Table 5-7: Best Fit Current Saturation Model – Onsite*

Variables	Coefficient**	90% Confidence Interval	
		Low	High
Composite Program	1.80	1.28	2.31
Years Using CFL	1.22	0.80	1.63
Pay Electricity Bill Directly	10.04	7.43	12.65
Change in County Unemployment Rate	5.15	3.68	6.63

* Sample size = 1,094; Because the intercept was set to zero, it is not appropriate to use the explained variance (R^2).** Data derived from OLS regression so the coefficient captures the impact on CFL saturation. Because the models are OLS and saturation cannot drop below 0%, we set the intercept equal to zero. CPUC respondents were not asked who pays their electricity bill, so they are excluded from the model.

The best fit onsite current use model is shown below in Table 5-8. Composite program score, years using CFLs, and the *current* saturation rate (*i.e.* at the time of the onsite survey) had a positive significant effect on the number of CFLs being used in the home. A number of other demographic and contextual variables also are present in the model, namely positive relationships between CFL use and being a homeowner, self-identification as white, speaking English as the primary language, and the square feet of Wal-Mart stores in the state. The model found a negative relationship between CFL use and having no more than a high school diploma, suggesting that those with more than a high school diploma used CFLs in greater numbers.

Table 5-8: Best Fit Current Use Model – Onsite*

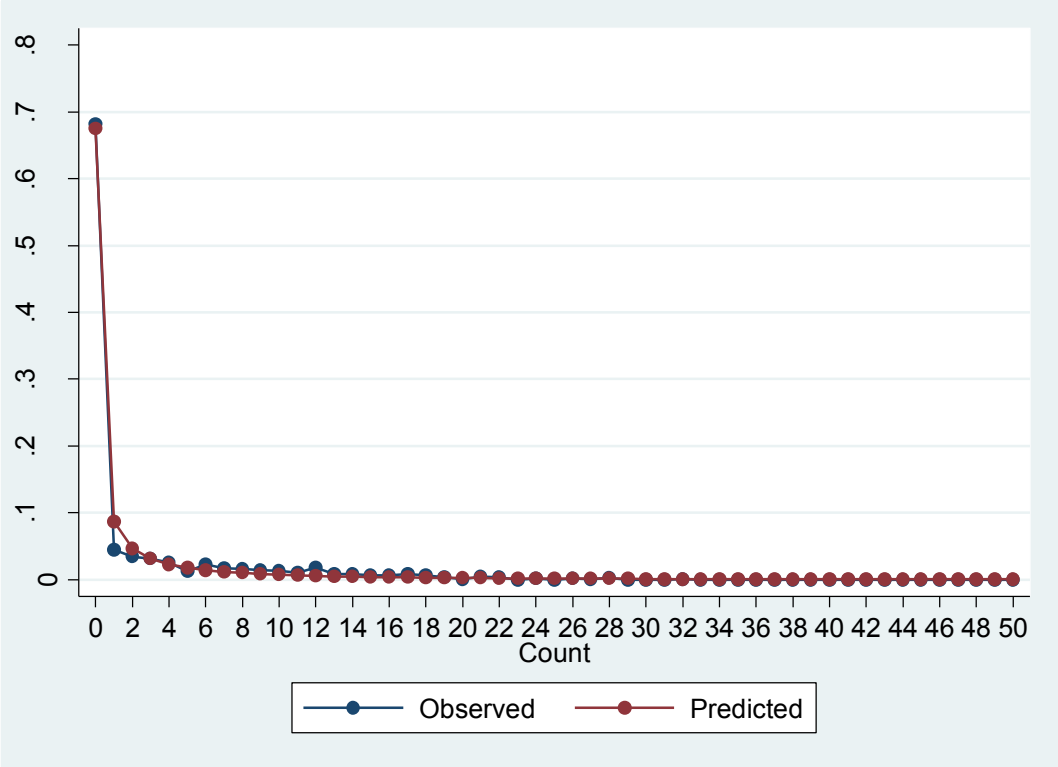
Variables	Coefficient	90% Confidence Interval		Impact Score
		Low	High	
Composite Program	0.02	0.01	0.04	0.02
Years Using CFLs	0.04	0.03	0.06	0.04
CFL Saturation in the Homer	0.04	0.04	0.05	0.04
Homeowner	0.76	0.64	0.88	1.14
Home Size	0.32	0.25	0.39	0.38
Self reported as White	0.29	0.18	0.41	0.34
English is Primary Language	0.38	0.17	0.59	0.47
Sqft Wal-Mart per Household (state)	0.07	0.04	0.10	0.07
High School Degree or Less	-0.19	-0.29	-0.10	-0.18
Constant	-1.01	-1.28	-0.74	n/a

* Sample size = 1,315; Pseudo R^2 = 16%.

One statistical note of importance: the estimates of fit for all the models are low. The explained variance (R^2) is typically used to determine how well an OLS model fits the data, while the likelihood ratio index (Pseudo or McFadden's R^2) addresses the likelihood of a NBRM. The explained variance and likelihood ratios for our models are small. Although it is usual for likelihood ratios to be smaller than explained variances, the ratios reported here are small enough to suggest that other factors not captured in our models also drive CFL purchases and use. We suspect that CFL price and availability may be among the missing variables based on preliminary evaluation findings from in-store surveys being conducted for the CPUC that are not yet publicly available. Apart from the CPUC, the Sponsors in all areas decided against store surveys because their budgets and schedules did not allow for this activity; therefore, CFL price data are not available for all areas in the study. Given that the CPUC findings suggest that CFL prices vary a great deal, we do not believe it would be accurate to apply price data from the four CPUC states to all areas in the analysis. There is no guarantee that the inclusion of variables for CFL price or availability (should we be able to arrive at a consistent and defensible measure of them) would increase the explained variances or likelihood ratios a great deal. Other unknown and currently not identified variables may be driving CFL sales, and without them, the models would still not be close fits to the data.

Despite the low likelihood ratios, the Figure 5-1 displays the observed vs. predicted probabilities for the 2008 purchase model, and demonstrates that the predicted probabilities are very close to the observed ones. Therefore, the models may not have high actual or pseudo R^2 but they appear to be good predictors of actual purchases.

Figure 5-1: Observed vs. Predicted Probabilities for Composite Program Variable 2008 Purchase Model – Onsite



Furthermore, the MR Team recognizes that prior program activity may, in fact, have boosted the number of households that have used CFLs for a longer period of time; however, it is also the case that some households in non-program areas have also used CFLs for a long time, requiring that we test for the *independent effect* of this variable apart from program activity, to the extent that appropriate statistical techniques allow. The model in Table 5-4—and all other models in this report—pass appropriate tests for multi-collinearity as determined through the tolerance statistic and variance inflation factor. For those still concerned about the potential that the length of CFL use, storage, or saturation to take explanatory power away from the program variable, we conducted sensitivity analyses (*i.e.* running models with and without the variables to show the impact on the results) presented in Appendix D.

5.4 Calculation of Total Net Impact for the IOU Service Territories

Although the MR Team lacked the *dependent variable*—number of CFLs purchased in 2008 as measured onsite—in the model used to estimate total net impact, we had all of the *independent* variables in the model. Therefore, the MR Team was able to estimate total net impact by applying the model to the data we had for California respondents on the independent variables. Specifically, the MR Team multiplied the impact score for each *non-program* independent variable across the onsite respondents in the sample. For the *program variable,* we multiplied the impact on purchases by the actual score for the composite program variable for California (4.91); we next repeated this step setting the composite program score equal to that for non-program areas (-3.15), creating a hypothetical California in the absence of a program. This latter calculation was used to develop an estimate of total net impact. Table 5-9 provides an example of these calculations for one respondent in California. For this individual, the predicted number of CFL purchases was 2.57, but would have been 1.68 in the absence of the program. The MR Team could not predict purchases for the few people who respondents "don't know" to or refused to answer questions included as variables in the model, which we take into account when calculating NTG.

Table 5-9: Predicted Purchases for One California Respondent Based on the 2008 Purchase Composite Program Variable Model – Onsite

Characteristic	Impact Score	Respondent Data	Contribution to Predicted Purchases	
			Program Scenario	No Program Scenario
Composite Program	0.11	4.91 with program -3.15 w/o program	0.54	-0.35
Years using CFL	0.10	1.0	0.11	0.11
Number of Sockets in Home	0.01	29.0	0.29	0.29
Number of Persons in Household	0.10	3.0	0.30	0.30
Self reported as White	0.51	1.0	0.51	0.51
Conducted During Fall Season	0.82	1.0	0.82	0.82
Total Purchase			2.57	1.68

* Results subject to rounding error

As shown in Table 5-10, after computing the per-household estimates, we summed the predicted purchases under both program scenarios across all onsite participants (Row A and Row B). We divided the totals by the number of households for whom we could estimate predicted purchases (*e.g.,* excluding those who refused to self-identify their race or the number of people living in the household, Row C). These calculations predict that each household in the California IOU service territories purchased an average 2.77 CFLs in the program scenario (Row D) and 1.86 CFLs in the non-program scenario (Row E), yielding an estimate of 0.91 CFLs being directly attributable to the program (Row F). Dividing this by the estimated number of incented CFLs per household (3.89 as reported in the ULP Residential Retrofit study) gives an estimated net impact of 0.23; the standard error is small so the 90% confidence interval shows no variation. Given the positive relationship between program activity and prior CFL use, it is likely that the net impact for 2006 and 2007 were higher, although the model does not allow us to estimate how much higher. Because they were not collected, the MR Team lacks *observed* 2008 purchase data for California and cannot assess how well the model predicts actual 2008 purchases; therefore, we cannot assess the validity of the model with any certainty, but it is potentially low as California was not included in the model development.

Table 5-10: Calculation of Total Net Impact

Input	Estimate
A. Predicted Purchased with Program (for comparison only)	169
B. Predicted Purchased without Program	113
C. Onsite Sample Size	61
D. Per-household Purchases with Program predicted (for comparison only)	2.77
E. Per-household purchases without Program	1.86
F. Net Program Purchases per Household Predicted	0.91
G. Incented CFLs per Household	3.89
H. Total Net Impact Predicted***	0.23

* Calculations subject to minor rounding error.

** Based on data supplied by KEMA, the three IOUs supported 38,508,189 CFLs (including specialty bulbs) in 2008. We estimated a total of 9,9 million households in the service territory, yielding the estimate of 3.89 CFLs per household.

6 Conclusions: Preliminary Recommendations

The multistate CFL modeling effort represents a groundbreaking attempt by numerous program sponsors to pool their resources in an effort to explain what drives CFL purchases, use, and saturation in the rapidly changing CFL market. To the end, the results presented in this report have demonstrated the following:

- CFL programs are still having a positive effect on CFL purchases and leading to positive NTG ratios. Sometimes those ratios are small, but other times they point to continued substantial program effects.
- Demographic and contextual factors sometimes have a larger impact on CFL purchases than programs, but program continue to boost CFL purchases. The size of the impact, however, varies by how long the program has existed and the existing CFL saturation rates in the area.
- As the logistic regression results make clear, the factors that drive existing CFL users to purchase new CFLs differ from those that drive CFL purchases among those who never used a CFL before. Importantly, CFL program activity remains an important driver of CFL purchases among new users, but appears to be less important than demographic and contextual factors in boosting purchases among existing CFL users.
- Another key finding from the logistic regression models is that the profile of households with higher CFL saturation switched from the beginning of 2008 to the time of the onsite studies. This points to a shift in the households and counties that added large numbers of CFLs to their homes in 2008.
- One of the most consistent predictors of CFL use, purchases, and saturation throughout the models is the length of CFL use. Households that have used CFLs for a long time continue to buy and use them and to install them in a greater percentage of sockets. Yet new households start to use CFLs, and the findings suggest that most will continue using them. This points to the importance of converting non-users to users, which appears to be a key accomplishment of the CFL programs taking part in this study.

The models presented in Section 5 suggest that CFL programs had positive effects on CFL sales in 2008 as well as on current use and CFL saturation. In addition, the results indicate that CFL programs also had a positive impact on CFL storage and on the length of time the respondent had used CFLs. Using the 2008 purchase model, the MR Team estimated a net impact of 0.23 However, concerns about the validity of the results for California due to our inability to include it in the development of the 2008 purchase model and the inclusion of spillover in the estimate of net impact in violation of the California evaluation protocols suggest that the results should most likely be used only to *inform* the evaluation of the 2006 to 2008 ULP but not to estimate net to gross ratios for the program. Likewise, California was not included in the current saturation model as the instruments did not collect data on who paid the electricity bill, a significant predictor of saturation. California, however, was included in the development of current CFL use models, so the validity is higher for this model. This study provides evidence that the California ULP program should continue its efforts to include more specialty bulbs among supported products and target the types of people who do not currently use CFLs at all or in large numbers, the venues where CFLs are sold in only limited quantities or at which non-users typically shop, and/or the general service and specialty applications where CFLs are still not frequently used even in the homes of committed CFL users.

The final conclusion of the modeling effort may, in fact, be the most important: The methods used to date to estimate NTG for upstream CFL programs have all suffered from reliability and validity concerns. Respondent self-report error and bias related to who responds to RDD and onsite surveys leads to imprecise estimates of NTG. Methods that turn to CFL shipments find that the location to which the products are shipped does not translate neatly to where they are sold, affecting the accuracy of NTG estimates. Existing studies that rely on sales data fail to capture the actual CFL market because they are sometimes unable to gather accurate sales data from all *participating* retailers and rarely can gather them from *non-participating* retailers, some of which sell large numbers of CFLs; therefore, the resulting NTG estimates do not fully reflect the program impact on the CFL market.

Despite current challenges in the approach, the evaluation team believes that *sales data* represent the best possible avenue for estimating accurate and precise NTG *if those data accurately represent the entire CFL market*, not just sales at participating program retailers. The CFL evaluation community, however, has largely been unsuccessful in gaining access to these data particularly from non-program retailers; some Sponsors even have trouble gather such information from participating retailers and manufacturers. Given this situation, the team presents the final recommendation: If CFL program sponsors remain committed to calculating NTG for CFLs (also LEDs and other small, relatively inexpensive products), they must work together with retailers and manufacturers to find acceptable ways of sharing data that do not threaten retailer and manufacturer competition but that still allow programs to assess in the most accurate way possible what their impact has been on the CFL market. Without such data, any estimate of the net impact of CFL programs will suffer from reliability and validity concerns to varying and sometimes unquantifiable degrees.

Appendix A: Sample Design, Sampling Error, and Weighting Schemes

In most cases, the development of the weighting scheme to correct for underrepresentation of renters and those with less than a high school diploma was straightforward: the MR Team downloaded data from the 2005 to 2007 *American Community Survey* on homeownership by educational attainment for the households in each state, county, or city included in the study. When developing estimates for areas not already summarized in the Census, the MR Team had to alter the approach slightly. We discuss our method for each below.

California: To limit the weighting scheme to the areas served by the IOUs, the MR Team compared a map of the IOU service territories to that of the counties of California. We then downloaded the Census data for the entire state and subtracted out the following areas because most or all of the area appeared to be outside of the IOU service territory: Del Norte, Imperial, Lassen, Riverside, Sacramento, Stanislaus, and the City of Los Angeles. Note that some smaller counties served by other utilities remain in the state total because they were too small to have their own ACS estimates of households by homeownership and education at the time we collected the data. Our method arrived at an estimated 9.5 million households in the IOU service territories, which compares rather favorably with the 9.9 million being used for other tasks completed by the CFL Market Effects Team.

Colorado: The surveys were fielded only in the Xcel Energy service territory. To isolate the weighting scheme for this area, we extracted ACS data for the entire state and then subtracted out the counties in which active residential electric accounts for Xcel Energy comprised fewer than 10% of the households listed for the county. Note that some smaller counties served by other utilities remain in the state total because they were too small to have their own ACS estimates of households by homeownership and education at the time we collected the data. We balanced this tendency by keeping in those counties with as few as 10% of their households served by Xcel. Our estimate of 1.2 million households is very close to the 1.1 million customers served by Xcel in Colorado in early January 2009.

Michigan: The surveys were fielded only in the CE service territory, but the CE service territory overlaps heavily with those of other electric utilities and cooperatives. Furthermore, even within the CE service territory, some customers can chose to purchase electricity from a different utility. This made it difficult to isolate the CE service territory using common US Census Bureau geographies such as zip codes and counties. In the end, to keep consistency with other states, we used the county. Specifically, we extracted ACS data for the entire state and then subtracted out the counties in which active residential electric accounts for CE comprised fewer than 20% of the households listed for the county. Most excluded counties were located in the Upper Peninsula, the southern part of the state, and the area around Detroit. The implication is that our weighting scheme is based on counties that collectively have over 2.2 million households,

although CE only serves 1.3 million households. Yet, the area covered by our weighting scheme and served by CE should be similar, given the proximity of service area boundaries.

New York State: To estimate New York State, we extracted data on the entire state and subtracted out similar information for New York City and Nassau and Suffolk Counties. Note that Westchester County—often included with New York City because of the shared Con Edison service territory—is included with the remainder of New York State for this analysis.

Ohio: In order to exclude the Duke Energy service territory in Ohio (which had a CFL program) we excluded the four counties largely located in the 513/283 area code: Butler, Clermont, Hamilton, and Warren.

Table A–0-1 on the next three pages displays the sample design, sampling error (based on absolute precision with 50/50 break in responses), and weighting scheme for each state. However, we stress that the sample design was applied *after* conducting the surveys to account for underrepresentation in of renters and those with less than a high school diploma.

Table A–0-1: Sample Design, Error, and Weighting Scheme – Telephone Survey

Area	Owner/Renter	High Level Education	Population	Sample Size	Sampling Error	Weight
CA	Owner	LT High School	664,485	35	14%	1.3
	Owner	High School	1,040,714	76	9%	1.0
	Owner	Some College	1,760,827	110	8%	1.1
	Owner	College or higher	2,222,234	280	5%	0.6
	Renter	LT High School	786,110	21	18%	2.7
	Renter	High School	869,115	32	15%	1.9
	Renter	Some College	1,183,320	49	12%	1.7
	Renter	College or higher	977,377	72	10%	1.0
	Area Total		9,504,182	675	11%	
CO	Owner	LT High School	65,569	11	26%	2.9
	Owner	High School	164,741	119	8%	0.7
	Owner	Some College	222,286	127	7%	0.9
	Owner	College or higher	321,354	284	5%	0.6
	Renter	LT High School	64,678	2	82%	16.0
	Renter	High School	103,726	16	21%	3.2
	Renter	Some College	123,223	7	34%	8.7
	Renter	College or higher	100,336	10	27%	5.0
	Area Total		1,165,913	576	26%	

Area	Owner/Renter	High Level Education	Population	Sample Size	Sampling Error	Weight
CT	Owner	LT High School	70,385	13	24%	1.9
	Owner	High School	232,152	75	10%	1.1
	Owner	Some College	233,643	71	10%	1.2
	Owner	College or higher	386,777	247	5%	0.6
	Renter	LT High School	79,051	9	29%	3.1
	Renter	High School	132,256	17	21%	2.8
	Renter	Some College	97,005	22	18%	1.6
	Renter	College or higher	92,162	18	20%	1.8
	Area Total		1,323,431	472	15%	
DC	Owner	LT High School	8,693	9	29%	1.9
	Owner	High School	13,606	35	14%	0.7
	Owner	Some College	18,401	55	11%	0.6
	Owner	College or higher	69,534	188	6%	0.7
	Renter	LT High School	25728	26	16%	1.9
	Renter	High School	33393	47	12%	1.4
	Renter	Some College	26067	52	12%	1.0
	Renter	College or higher	54383	68	10%	1.5
	Area Total		249,805		12%	
GA	Owner	LT High School	299,850	27	16%	1.8
	Owner	High School	612,508	108	8%	0.9
	Owner	Some College	608,806	112	8%	0.9
	Owner	College or higher	764,720	224	6%	0.6
	Renter	LT High School	240,407	13	24%	3.0
	Renter	High School	335,087	22	18%	2.5
	Renter	Some College	306,650	24	17%	2.1
	Renter	College or higher	196,721	24	17%	1.3
	Area Total		3,364,749		13%	
Houston	Owner	LT High School	127,526	20	19%	2.3
	Owner	High School	158,057	52	12%	1.1
	Owner	Some College	206,918	91	9%	0.8
	Owner	College or higher	285,704	208	6%	0.5
	Renter	LT High School	144,922	12	25%	4.4
	Renter	High School	144,564	31	15%	1.7
	Renter	Some College	146,669	39	13%	1.4
	Renter	College or higher	108,831	33	15%	1.2
	Area Total		1,323,191	486	14%	

Area	Owner/Renter	High Level Education	Population	Sample Size	Sampling Error	Weight
IN	Owner	LT High School	204,034	16	21%	3.0
	Owner	High School	627,957	161	7%	0.9
	Owner	Some College	485,284	121	8%	0.9
	Owner	College or higher	447,405	206	6%	0.5
	Renter	LT High School	131,880	6	37%	5.2
	Renter	High School	243,255	37	14%	1.6
	Renter	Some College	204,589	21	18%	2.3
	Renter	College or higher	103,483	11	26%	2.2
	Area Total		2,447,887	579	15%	
KS	Owner	LT High School	65,548	18	20%	1.7
	Owner	High School	213,936	104	8%	0.9
	Owner	Some College	231,881	113	8%	0.9
	Owner	College or higher	247,853	194	6%	0.6
	Renter	LT High School	47,338	6	37%	3.6
	Renter	High School	100,310	17	21%	2.7
	Renter	Some College	112,300	23	18%	2.2
	Renter	College or higher	64,702	20	19%	1.5
	Area Total		1,083,868	495	14%	
MD	Owner	LT High School	128,732	8	31%	3.8
	Owner	High School	331,337	86	9%	0.9
	Owner	Some College	372,569	81	9%	1.1
	Owner	College or higher	612,788	227	5%	0.6
	Renter	LT High School	106,104	4	47%	6.2
	Renter	High School	181,390	24	17%	1.8
	Renter	Some College	180,608	29	16%	1.5
	Renter	College or higher	169,045	31	15%	1.3
	Area Total		2,082,573	490	17%	
MA	Owner	LT High School	117,237	4	47%	5.8
	Owner	High School	375,594	59	11%	1.3
	Owner	Some College	390,311	77	9%	1.0
	Owner	College or higher	707,515	262	5%	0.5
	Renter	LT High School	155,673	8	31%	3.8
	Renter	High School	256,204	23	18%	2.2
	Renter	Some College	200,304	23	18%	1.7
	Renter	College or higher	245,770	28	16%	1.7
	Area Total		2,448,608	484	17%	

Area	Owner/Renter	High Level Education	Population	Sample Size	Sampling Error	Weight
MI	Owner	LT High School	161,484	22	18%	2.1
	Owner	High School	497,755	150	7%	0.9
	Owner	Some College	545,681	184	6%	0.8
	Owner	College or higher	508,844	221	6%	0.7
	Renter	LT High School	81,506	6	37%	3.9
	Renter	High School	169,007	28	16%	1.7
	Renter	Some College	180,415	20	19%	2.6
	Renter	College or higher	100,591	11	26%	2.6
	Area Total		2,245,283	642	13%	
NYS	Owner	LT High School	192,252	15	22%	3.9
	Owner	High School	630,006	197	6%	1.0
	Owner	Some College	604,150	208	6%	0.9
	Owner	College or higher	741,480	387	4%	0.6
	Renter	LT High School	173698	16	21%	3.3
	Renter	High School	325303	51	12%	1.9
	Renter	Some College	285186	49	12%	1.8
	Renter	College or higher	205718	37	14%	1.7
	Area Total		3,157,793	960	11%	
NYC	Owner	LT High School	124,446	4	47%	4.9
	Owner	High School	250,452	52	12%	0.8
	Owner	Some College	215,427	59	11%	0.6
	Owner	College or higher	433,111	126	7%	0.5
	Renter	LT High School	456,265	27	16%	2.7
	Renter	High School	507,218	69	10%	1.2
	Renter	Some College	401,363	52	12%	1.2
	Renter	College or higher	633,869	87	9%	1.1
	Area Total		3,022,151	476	14%	
OH	Owner	LT High School	288,088	20	19%	1.8
	Owner	High School	967,505	127	7%	0.9
	Owner	Some College	751,623	101	8%	0.9
	Owner	College or higher	732,982	152	7%	0.6
	Renter	LT High School	210887	7	34%	3.8
	Renter	High School	420482	38	14%	1.4
	Renter	Some College	343033	31	15%	1.4
	Renter	College or higher	183121	10	27%	2.3
	Area Total		3,897,721	486	14%	

Area	Owner/Renter	High Level Education	Population	Sample Size	Sampling Error	Weight
PA	Owner	LT High School	376,781	20	19%	2.4
	Owner	High School	1,273,333	174	6%	0.9
	Owner	Some College	802,021	130	7%	0.8
	Owner	College or higher	1,031,937	207	6%	0.6
	Renter	LT High School	243,469	8	31%	3.9
	Renter	High School	514,171	36	14%	1.8
	Renter	Some College	340,709	27	16%	1.6
	Renter	College or higher	276,088	24	17%	1.5
	Area Total		4,858,509	626	13%	
WI	Owner	LT High School	137,004	14	23%	2.2
	Owner	High School	512,057	93	9%	1.2
	Owner	Some College	468,286	123	7%	0.8
	Owner	College or higher	454,210	182	6%	0.5
	Renter	LT High School	104,231	7	34%	3.3
	Renter	High School	230,239	37	14%	1.4
	Renter	Some College	210,758	15	22%	3.1
	Renter	College or higher	118,461	21	18%	1.2
	Area Total		2,235,246	492	14%	

Table A–0-2 presents the weighting scheme for the onsite survey. The development of the scheme is described in detail in Section 0, but here we present the actual weights as well as sample sizes and sampling error by familiarity and household ownership.

Table A–0-2: Sample Design, Error, and Weighting Schemes for Onsite Data

Area	Owner/Renter	Familiarity with CFLs	Population	Sample Size	Sampling Error	Weight
CA	Owner	Familiar	4,461,380	40	12%	0.9
	Owner	Not Familiar	1,226,880	11	25%	1.1
	Renter	Familiar	3,228,857	22	17%	1.1
	Renter	Not Familiar	587,065	4	46%	1.7
	Area Total		9,504,182	77	21%	
CO	Owner	Familiar	583,379	49	11%	0.7
	Owner	Not Familiar	190,571	11	25%	1.1
	Renter	Familiar	161,634	5	40%	1.9
	Renter	Not Familiar	230,329	5	40%	2.7
	Area Total		1,165,913	70	26%	

Area	Owner/Renter	Familiarity with CFLs	Population	Sample Size	Sampling Error	Weight
CT	Owner	Familiar	779,120	65	9%	0.8
	Owner	Not Familiar	143,837	12	23%	1.4
	Renter	Familiar	200,237	9	27%	1.7
	Renter	Not Familiar	200,237	9	27%	1.6
	Area Total		1,323,431	95	19%	
DC	Owner	Familiar	85,093	44	10%	0.6
	Owner	Not Familiar	25,141	13	22%	1.1
	Renter	Familiar	59,318	17	19%	1.3
	Renter	Not Familiar	80,253	23	16%	1.4
	Area Total		249,805	97	16%	
GA	Owner	Familiar	1,446,172	31	14%	1.0
	Owner	Not Familiar	839,712	18	18%	0.7
	Renter	Familiar	497,938	6	36%	1.6
	Renter	Not Familiar	580,927	7	32%	1.4
	Area Total		3,364,749	62	23%	
Houston	Owner	Familiar	611,447	55	9%	0.7
	Owner	Not Familiar	166,758	15	20%	1.5
	Renter	Familiar	300,682	16	19%	1.0
	Renter	Not Familiar	244,304	13	22%	1.9
	Area Total		1,323,191	99	18%	
IN	Owner	Familiar	1,384,595	51	11%	0.9
	Owner	Not Familiar	380,085	14	21%	1.2
	Renter	Familiar	534,684	18	18%	0.9
	Renter	Not Familiar	148,523	5	39%	1.8
	Area Total		2,447,887	88	19%	
KS	Owner	Familiar	556,760	44	11%	0.8
	Owner	Not Familiar	202,458	16	20%	1.0
	Renter	Familiar	59,027	2	81%	5.5
	Renter	Not Familiar	265,623	9	27%	1.1
	Area Total		1,083,868	71	36%	
MD	Owner	Familiar	1,092,100	34	13%	.8
	Owner	Not Familiar	353,326	11	25%	1.1
	Renter	Familiar	231,690	4	46%	2.7
	Renter	Not Familiar	405,457	7	31%	0.9
	Area Total		2,082,573	56	27%	

Area	Owner/Renter	Familiarity with CFLs	Population	Sample Size	Sampling Error	Weight
MA	Owner	Familiar	1,332,175	67	9%	0.7
	Owner	Not Familiar	258,482	13	22%	1.1
	Renter	Familiar	600,566	14	21%	1.5
	Renter	Not Familiar	257,385	6	35%	2.4
	Area Total		2,448,608	100	19%	
MI	Owner	Familiar	1,483,557	58	10%	0.9
	Owner	Not Familiar	230,207	9	28%	1.7
	Renter	Familiar	413,404	14	10%	.9
	Renter	Not Familiar	118,115	4	46%	1.8
	Area Total		2,245,283	85	21%	
NYS	Owner	Familiar	1,736,922	133	6%	0.8
	Owner	Not Familiar	430,966	33	13%	1.2
	Renter	Familiar	668,855	25	16%	1.5
	Renter	Not Familiar	321,050	12	24%	2.1
	Area Total		3,157,793	203	13%	
NYC	Owner	Familiar	827,459	38	11%	0.6
	Owner	Not Familiar	195,977	9	15%	1.4
	Renter	Familiar	960,921	25	16%	1.4
	Renter	Not Familiar	1,037,794	27	27%	1.1
	Area Total		3,022,151	99	16%	
OH	Owner	Familiar	2,064,045	58	9%	0.8
	Owner	Not Familiar	676,153	19	18%	1.6
	Renter	Familiar	636,638	11	24%	1.3
	Renter	Not Familiar	520,885	9	27%	1.2
	Area Total		3,897,721	97	18%	
PA	Owner	Familiar	2,737,485	33	14%	0.9
	Owner	Not Familiar	746,587	9	28%	1.4
	Renter	Familiar	970,191	12	23%	0.8
	Renter	Not Familiar	404,246	5	40%	1.5
	Area Total		4,858,509	59	23%	
WI	Owner	Familiar	1,360,452	58	10%	0.8
	Owner	Not Familiar	211,105	9	27%	1.4
	Renter	Familiar	486,705	11	25%	1.5
	Renter	Not Familiar	176,984	4	45%	1.8
	Area Total		2,235,246	82	22%	

Appendix B: Summary of Key Variables: Telephone Survey

This appendix summarizes the key telephone survey variables used in the analysis across participating areas. We present the results to provide an overall picture of the data; the footnotes highlight and explain unexpected findings and discuss our responses to them. We also refer the reader to Section 2.4 for a detailed discussion about comparability among the surveys.

Table B–0-1: Comparison of Key Variables Across Participating Areas – Means, Telephone Surveys*

	Number of CFLS Currently Installed in Home**		Number of CFLs Installed One Year Ago		Number of CFLS Purchased Last Year / in 2008***		Number of CFLS Purchased in the Last Three Months****	
	Sample Size	Mean	Sample Size	Mean	Sample Size	Mean	Sample Size	Mean
CA	699	7.2			699	1.4	698	0.9
CO	600	4.8	600	2.6	600	3.1	600	0.3
CT	500	6.4	499	3.5	499	2.7	500	0.3
DC	500	3.2	500	2.1	499	3.0	500	0.7
GA	578	6.2			579	1.4	578	1.0
IN	600	5.3	600	2.4	600	2.9	600	0.4
KS	525	6.1			525	1.1	525	1.1
MD	500	5.5	500	3.1	500	3.0	500	0.4
MA	503	5.8	503	3.4	503	2.8	503	0.3
MI	657	6.2	657	3.4	657	2.8	657	0.4
NY State	1,000	5.5	999	3.5	1000	4.2	1000	1.1
NY City	502	3.5	502	2.4	502	3.5	502	1.1
OH	501	4.3	501	2.9	501	3.5	501	1.0
PA	653	5.4			653	1.2	653	0.9
Houston	503	4.9	502	3.0	503	4.1	503	0.8
WI	503	6.5	503	3.7	503	2.5	503	0.4
OVERALL	9,324	5.5	6,865	3.0	9,323	2.7	9,323	0.7

	Percent of Bulb Purchased in 2008 that were CFLs*****		Percent of Bulb Purchased in Last Three Months that were CFLs*****		Number of CFLs in Storage		Years Using CFLS	
	Sample Size	Mean	Sample Size	Mean	Sample Size	Mean	Sample Size	Mean
CA			259	30%	699	2.9	688	1.9
CO	455	36%	144	28%	600	2.2	600	1.4
CT	379	31%	113	28%	500	2.5	500	1.8
DC	411	27%	240	26%	500	1.3	500	1.4
GA			573	10%	579	1.7	579	1.8
IN	455	32%	123	34%	600	1.8	600	1.5
KS			519	12%	525	1.9	525	2.0
MD	403	29%	114	33%	500	2.1	500	1.6
MA	416	30%	95	33%	503	2.5	503	2.4
MI	467	35%	135	34%	657	2.2	657	1.7
NY State	886	39%	462	38%	1000	1.8	1000	1.8
NY City	426	33%	232	34%	502	1.5	502	1.7
OH	426	32%	233	32%	501	1.5	501	1.3
PA			648	10%	653	1.7	653	1.9
Houston	424	31%	215	26%	503	1.3	503	1.2
WI	386	31%	105	38%	503	2.5	503	2.2
OVERALL	5,534	33%	4,210	23%	9,325	2.0	9,314	1.7

	Unemployment Rate		Household Size		Square Footage of Box Stores per Household in County			
	Sample Size	Mean	Sample Size	Mean	Sample Size	Wal-Mart Stores - Mean	Other Box Stores - Mean	All Box Stores - Mean
CA	699	7.9	563	3.4	699	2.0	2.6	4.6
CO	600	7.5	595	2.3	600	6.3	3.6	9.9
CT	500	8.1	472	2.5	500	1.2	1.4	2.6
DC	500	9.6	478	2.3	500	0.0	0.4	0.4
GA	578	7.0	453	2.9	578	7.8	4.4	12.3
IN	600	10.7	578	2.4	600	8.3	2.7	11.0
KS	485	4.4	391	2.9	460	9.7	2.6	12.3
MD	500	7.9	486	2.6	500	4.0	3.4	7.4
MA	503	8.8	488	2.5	503	2.6	3.0	5.5
MI	657	14.6	642	2.4	655	2.2	2.3	4.5
NY State	1000	8.5	959	2.5	1000	5.2	3.7	8.9
NY City	502	7.4	475	2.7	502	0.0	0.6	0.6
OH	501	10.4	491	2.6	501	6.9	3.6	10.5
PA	613	5.6	487	3.0	578	5.1	2.7	7.8
Houston	503	6.4	488	3.0	503	5.5	3.4	8.9
WI	503	9.4	497	2.4	503	7.5	3.7	11.1
OVERALL	9,242	8.5	8,543	2.6	9,242	4.7	2.8	7.5

Table footnotes on next page.

* The sample sizes change for different variable because not all respondents answered all questions. Furthermore, the MR Team is still matching some CPUC state cases to individual counties, a task that will be completed in October. Finally, we also remove outliers for household size and the use and purchase data.
** The CPUC survey first asked respondents the number of CFL currently in use and storage. Then, the survey asked if the respondent was using or storing the same number of CFLs three months ago and one year ago. If the respondent said "yes" the three month and one year ago use and storage numbers were assumed to be the same as the current number. The other surveys simply asked the number of CFLs stored currently, three months ago, and one year ago (or the beginning of 2008, depending on the survey). The differences in methodology likely underlie the slight but apparent differences between the CPUC states and other areas in the study on these variables. However, the estimates are relatively close, so we have included these variables for the CPUC states in the analyses.
*** The CPUC survey asked respondents to name the number of CFLs purchased since January 1, 2006 and then to isolate from that number purchased in 2006, 2007, and 2008. Furthermore, the survey was fielded in the fall of 2008 before the year's end. Therefore, the results are not comparable to those developed for other areas and will be excluded from the analysis. We report the summary statistics here to show the impact of these differences on the estimates.
**** These results demonstrate the effect of survey timing, with estimates from the surveys fielded in the fall and winter showing higher rates of purchases in the past three months than those fielded in the summer.
***** Limited to only those who purchased any light bulbs in the time period. Most surveys forced respondents to limit their estimated "past three month" purchases to less than or equal to the number purchased to date in the preceding year (e.g., all of 2009 for surveys conducted in the summer of 2009, all of 2008 for surveys conducted in January 2009). However, the CPUC instrument asked only about the past three months, and this may explain the divergent market share estimates for the four CPUC states.

Table B–0-2: Comparison of Key Variables across Areas – CFL Related Factors*

	Aware of CFLS		Somewhat to Very Familiar with CFLs		Satisfied with CFLS		Pay Electric Bill Directly to Electric Company	
	Sample Size	Percentage	Sample Size	Percentage	Sample Size	Percentage	Sample Size	Percentage
CA	699	96%	699	76%	564	86%		
CO	600	90%	600	64%	416	76%	600	94%
CT	500	86%	500	67%	362	88%	500	92%
DC	500	72%	500	51%	250	90%	500	75%
GA	579	88%	579	63%	389	89%		
IN	600	91%	600	71%	431	86%	600	89%
KS	525	93%	525	64%	381	82%		
MD	500	87%	500	66%	331	82%	500	89%
MA	503	87%	503	71%	367	86%	503	90%
MI	657	94%	657	74%	500	82%	657	95%
NY State	1,000	90%	1,000	69%	722	89%	1,000	87%
NY City	502	78%	502	57%	281	93%	502	77%
OH	501	86%	501	62%	301	87%	501	88%
PA	653	91%	653	65%	458	85%		
Houston	503	74%	503	52%	295	87%	503	90%
WI	503	93%	503	57%	397	83%	503	96%
OVERALL	9,325	88%	9,325	66%	6,419	86%	6,869	89%

Table B–0-3: Comparison of Key Variables across Areas – Type of Home

	Single-Family Detached Home		Single-Family Attached Home		Apt. Building W/ 2-4 Units		Apt. Building w/ 5 or More Units		Mobile Home/Other	
	Sample Size	Percentage	Sample Size	Percentage	Sample Size	Percentage	Sample Size	Percentage	Sample Size	Percentage
CA	699	65%	699	8%	699	8%	699	15%	699	3%
CO	600	73%	600	14%	600	9%	600	4%	600	0%
CT	500	66%	500	12%	500	6%	500	12%	500	1%
DC	500	26%	500	23%	500	12%	500	36%	500	1%
GA	579	76%	579	4%	579	4%	579	9%	579	5%
IN	600	74%	600	7%	600	7%	600	7%	600	4%
KS	525	76%	525	6%	525	4%	525	9%	525	4%
MD	500	59%	500	20%	500	4%	500	13%	500	4%
MA	503	55%	503	17%	503	11%	503	16%	503	2%
MI	657	75%	657	6%	657	3%	657	10%	657	7%
NY State	1,000	65%	1,000	10%	1,000	9%	1,000	9%	1,000	6%
NY City	502	20%	502	18%	502	15%	502	38%	502	7%
OH	501	70%	501	11%	501	2%	501	10%	501	5%
PA	653	70%	653	10%	653	5%	653	9%	653	5%
Houston	503	61%	503	9%	503	5%	503	20%	503	5%
WI	503	67%	503	9%	503	6%	503	12%	503	7%
OVERALL	9,325	63%	9,325	11%	9,325	7%	9,325	14%	9,325	4%

Table B–0-4: Comparison of Key Variables across Areas – Homeownership and Home Size

	Own Home		Home Size (Sq. Ft.)					
	Sample Size	Percentage	Sample Size	Percentage Less than 2,000 sqft	Sample Size	Percentage, between 2,000 and 3,999 sqft	Sample Size	Percentage 4,000 or more sqft
CA	699	60%	690	34%	690	55%	690	12%
CO	600	66%	552	63%	552	34%	552	3%
CT	500	87%	500	64%	500	28%	500	8%
DC	500	43%	485	76%	485	20%	485	4%
GA	579	67%	567	28%	567	55%	567	17%
IN	600	72%	591	62%	591	38%	591	0%
KS	525	70%	508	36%	508	54%	508	11%
MD	500	69%	493	56 %	493	36%	493	7%
MA	503	64%	496	64%	496	30%	496	6%
MI	657	76 %	657	60%	657	28%	657	3%
NY State	1,000	68%	981	67%	981	31%	981	2%
NY City	502	34%	488	82%	488	16%	488	2%
OH	501	70%	494	64%	494	32%	494	4%
PA	653	70%	617	36%	617	54%	617	10%
Houston	503	59%	493	66%	493	31%	493	3%
WI	503	71%	500	69%	500	37%	500	0%
OVERALL	9,325	65%	9,112	58%	9,112	37%	9,112	6%

Table B–0-5: Comparison of Key Variables across Areas – Demographic Factors

	English Primary Lang. Spoken at Home		More than High School Education		White		Female		Income Under $30,000**	
	Sample Size	Percentage	Sample Size	Percentage	Sample Size	Percentage	Sample Size	Percentage	Sample Size	Percentage
CA	699	77%	699	62%	666	69%	699	60%	699	33%
CO	600	95%	600	63%			600	68%	600	31%
CT	500	92%	500	59%	500	75%	500	56%	500	26%
DC	500	97%	500	65%	500	32%	500	59%	500	32%
GA	579	90%	579	54%	571	63%	579	63%	579	18%
IN	600	96%	600	49%	600	85%	600	64%	600	28%
KS	525	94%	525	57%	520	86%	525	56%	525	15%
MD	500	95%	500	63%	500	68%	500	64%	500	29%
MA	503	97%	503	60%	503	86%	503	59%	503	28%
MI	657	98%	657	58%	657	87%	657	64%	657	32%
NY State	1,000	97%	1,000	56%	1,000	86%	1,000	58%	1,000	37%
NY City	502	81%	502	54%	502	53%	502	58%	502	31%
OH	501	98%	501	50%	501	83%	501	55%	501	33%
PA	653	95%	653	49%	649	84%	653	60%	653	14%
Houston	503	86%	503	56%	503	51%	503	60%	503	34%
WI	503	99%	503	55%	503	91%	503	56%	503	27%
OVERALL	9,325	93%	9,325	57%	8,675	74%	9,325	60%	9,325	28%

Table footnotes on next page.

* Sample sizes vary based on the number of respondents asked the question. For example, only respondents currently using CFLs were asked how satisfied they were with the products.

* The CPUC instrument used different income categories, with the second category grouping individuals in the $20,000 to $49,999 category. After adjusting for cost of living, only those individuals who made less than $20,000 (non-adjusted) were able to be categorized as "low income" in our scheme.

Appendix C: Demographic Variation in Current CFL Use and 2008 Purchase Behavior – Telephone Self-Reported Data

The data presented in Table C–0-1 through Table C–0-6 summarize telephone survey self-reported current CFL use and 2008 purchases by key housing, demographic, and other variables much the same way that Section 3.6 does for onsite verified use and reported 2008 purchases. The MR Team reminds the reader that this and other evaluations have shown that the telephone survey self-reported data on use and purchases are not reliable, and the CFL counts must be interpreted with this in mind. However, the data are useful in showing the patterns that relate to self-reported CFL use and purchases as well as lack of awareness and familiarity.

Table C–0-1: Current CFL Use by Key Housing Characteristics – Telephone Survey

Variable	Sample Size	Number of CFLs					Not aware / familiar
		Zero	1 to 5	6 to 10	11 to 15	16+	
Type of Home							
Single Family Detached	6,759	18%	23	21	11	11	15
Single Family Attached	922	23%	24	18	7	7	21
Apartment 2-4 units	408	27%	25	18	4	2	24
Apartment 5+ units	849	29%	25	12	4	1	30%
Mobile/Other	292	23%	23	13	9	7	25
Homeownership							
Own	7,457	18%	23	21	11	12	15
Rent	1,748	27%	24	14	5	2	27
Home Size							
Less than 2,000 sqft	4,549	22%	25	18	7	5	24
2,000 to 3,999 sqft	3,911	19%	24	21	11	12	13
4,000 sqft or more	652	20%	18	19	12	18	12
Who Pays Electric Bill							
Pays Bill Directly	6,296	21%	23	19	9	8	20
Included in Rent/Fee	295	30%	21	12	2	<1	35

Table C–0-2: 2008 CFL Purchases by Key Housing Characteristics – Telephone Survey

Variable	Sample Size	Number of CFLs					Not aware / familiar
		Zero	1 to 5	6 to 10	11 to 15	16+	
Type of Home							
Single Family Detached	6,759	48%	17	13	4	4	15
Single Family Attached	922	45%	16	11	4	4	21
Apartment 2-4 units	408	49%	13	10	2	1	24
Apartment 5+ units	849	49%	13	7	1	1	29
Mobile/Other	292	52%	10	9	2	3	25
Homeownership							
Own	7,457	47%	17	13	4	4	15
Rent	1,748	49%	12	8	2	2	27
Home Size							
Less than 2,000 sqft	4,549	45%	16	10	3	2	24
2,000 to 3,999 sqft	3,911	51%	15	13	4	4	13
4,000 sqft or more	652	54%	12	12	6	5	12
Who Pays Electric Bill							
Pays Bill Directly	6,296	39%	18	14	4	4	20
Included in Rent/Fee	295	43%	13	7	1	1	35

Table C–0-3: Current CFL Use by Key Demographic Characteristics – Telephone Survey

Variable	Sample Size	Number of CFLs					Not aware / familiar
		Zero	1 to 5	6 to 10	11 to 15	16+	
Primary Language							
English	8,833	21%	24	19	9	9	18
Another language	330	20%	23	15	7	5	31
Self-Identified Race							
White	6,729	20%	25	21	10	10	15
Another race(s)	1,492	24%	20	14	5	5	32
Education							
Beyond high school	6,372	20%	25	22	10	10	13
High school or less	2,640	23%	22	15	7	5	28
*Income COL Adjusted**							
Less than $30,000	1,902	24%	24	15	6	5	27
$30,000 or higher	4,889	20%	24	22	11	12	12
Gender							
Male	3,837	19%	23	21	10	11	17
Female	5,484	23%	24	18	8	7	21
County Metropolitan Status							
Metropolitan	7,738	21%	23	19	8	8	20
Non-metropolitan	1,507	20%	25	19	11	10	16

* Adjusted for the cost of living

Table C–0-4: 2008 CFL Purchases by Key Demographic Characteristics – Telephone Survey

Variable	Sample Size	Number of CFLs					Not aware / familiar
		Zero	1 to 5	6 to 10	11 to 15	16+	
Primary Language							
English	8,833	48%	16	12	4	3	18
Another language	330	50%	6	8	3	2	31
Self-Identified Race							
White	6,729	49%	17	12	4	3	15
Another race(s)	1,492	45%	10	8	2	3	32
Education							
Beyond high school	6,372	47%	18	14	4	4	13
High school or less	2,640	48%	12	8	2	2	28
*Income COL Adjusted**							
Less than $30,000	1,902	47%	14	8	2	2	27
$30,000 or higher	4,889	49%	17	14	5	4	12
Gender							
Male	3,837	45%	17	13	4	4	17
Female	5,484	49%	14	10	3	3	21
County Metropolitan Status							
Metropolitan	7,738	47%	15	11	4	3	20
Non-metropolitan	1,507	51%	16	11	3	3	16

* Adjusted for the cost of living

Table C–0-5: Average Values for Key Variables by Number of CFLs Currently in Use – Telephone Survey

	Number of CFS										Not aware / familiar	
	Zero		1 to 5		6 to 10		11 to 15		16+			
Variable	n	Mean	n	Mean	n	Mean	n	Mean	n	Mean	n	Mean
Household size	1,644	2.6	2,014	2.5	1,793	2.7	890	2.9	916	3.0	1,287	2.5
County unemployment rate	1,792	8.6	2,162	8.4	1,912	8.5	954	8.6	961	8.4	1,434	8.4
Years Using CFLs	1,801	0.7	2,210	2.2	1,926	2.7	961	3.1	969	3.6	1,448	0.0
Density of Wal-Marts	1,792	4.6	2,192	5.0	1,910	4.5	954	4.5	961	5.1	1,434	4.3
Density of Other Box Stores	1,792	2.8	2,192	2.9	1,910	2.8	954	2.9	961	2.9	1,434	2.6
Density of All Box Stores	1,792	7.4	2,192	7.9	1,910	7.3	954	7.5	961	8.0	1,434	6.9
Partisan Voting Index*	1,792	-8.7	2,192	-7.6	1,910	-7.3	954	-6.1	961	-2.4	1,434	-14.1

* The more negative the score, the more heavily democratic leaning the area

Table C–0-6: Average Values for Key Variables by Number of CFLs Purchased in 2008 – Telephone Survey

	Number of CFS										Not aware / familiar	
	Zero		1 to 5		6 to 10		11 to 15		16+			
Variable	n	Mean	n	Mean	n	Mean	n	Mean	n	Mean	n	Mean
Household size	3,893	2.6	1,499	2.5	1,154	2.8	375	3.0	336	3.1	1,287	2.5
County unemployment rate	4,318	8.3	1,563	8.7	1,192	8.8	386	8.6	352	8.7	1,434	8.4
Years Using CFLs	4,362	1.9	1,572	2.6	1,195	2.6	387	2.5	351	2.4	1,448	0.0
Density of Wal-Marts	4,317	4.9	1,563	4.6	1,191	4.5	386	4.4	352	4.4	1,434	4.3
Density of Other Box Stores	4,317	2.9	1,563	2.8	1,191	2.8	386	2.9	352	2.9	1,434	2.6
Density of All Box Stores	4,317	7.8	1,563	7.4	1,191	7.3	386	7.3	352	7.2	1,434	6.9
Partisan Voting Index*	4,317	-5.4	1,563	-9.9	1,192	-9.8	386	-8.4	352	-8.2	1,434	-14.1

* The more negative the score, the more heavily democratic leaning the area

Appendix D: Additional Regression Models, including Sensitivity Analyses

The MR Team presents additional regression models in this section. These models help to clarify the relationship between the program variable and the other independent variables, others serve as potential alternatives to the recommended models described in the main body of the text, and the remainder provides "sensitivity analyses" to ascertain whether or not such variables as historic CFL use, saturation, and storage rob explanatory power from the program variable. We explain the purpose of each model prior to its presentation, but we do not include detailed descriptions of the model.

Relationship between Program and Other Independent Variables

The MR Team developed an OLS regression model that treated the composite program variable as the *dependent variable* in order to determine which independent variables most closely tied to the existence and strength of programs.[55] We did so using only variables gathered through the telephone survey and excluded key dependent variables (*i.e.,* use, purchases, or saturation). This model, presented in Table D–0-1, should not be seen as a *causal* model, but instead one that shows which independent variables are most closely tied to program activity. The coefficients ("b" in most statistical package outputs) are the primary results of interest and show how much the composite program variable changes with a one unit increase in each independent variable. We also present the standardized coefficients ("Beta" in most statistical package outputs), which adjust for the different scales of the original coefficients and allow for easier comparisons of the impact of the independent variables on the composite program variable.[56]

The results indicate that areas with more non-metropolitan counties, counties that have lower unemployment rates, and those with higher percentages of respondents who self-identify as white are the most likely to have strong program variables. Likewise, it is also the case that areas marked by respondents who have used CFLs for a long time, store more CFLs, and who are likely to pay their own electricity bills are also more likely to have strong programs.

[55] The team could use OLS in this model because we had standardized the program variable, therefore forcing it into a normal distribution.

[56] We present the standardized coefficients here for the sake of comparison, but the evaluation team recognizes that doing so creates interpretative issues for dichotomous variables (*i.e.* the income, language, bill pay, and self-identified race variables).

Table D–0-1: Predictors of Composite Program Variable – Best Model

Dependent Variable = Composite Program Variable Independent Variables	Coefficient	Standardized Coefficient	t
County metropolitan status	-0.67	-0.09	-6.12
County Unemployment Rate	-0.44	-0.43	-29.61
Years using CFL	0.07	0.07	4.86
Current CFLs in storage	0.03	0.04	2.56
Pays Electricity Bill Directly	0.41	0.04	3.02
Adjusted income <$30,000**	0.22	0.04	2.76
Sq Ft. of Other Box Stores Per person at the County Level***	0.06	0.06	3.86
Sq Ft. of Wal-Mart Per person at the State Level****	-0.22	-0.12	-8.11
English is Primary Language*****	1.11	0.07	4.89
Self-Identify as White	1.23	0.19	13.04
Constant	2.17	n/a	6.79

* Sample Size = 4,427, Adjusted R^2 = 20%

** Adjusted for the cost of living

*** Other indicates Home Depot, Lowe's, and Menards (where it exists)

**** Wal-Mart shown at the state level to avoid collinearity with the county level variable

***** The survey was fielded in languages other than English in only a few places, so this variable includes some selection bias.

The model presented in Table D–0-1 does not incorporate data from the CPUC states—because respondents were not asked who paid the electricity bill. Therefore, we also present the model in Table D–0-2 which includes data for all states except Colorado for reasons discussed in Section 2.4.2. The explained variance (R^2) is much lower than found for the model presented in Table D–0-1. This second model excludes the variables about paying electricity bills. Doing so causes the metropolitan status variable to become positively related to program and the percentage of respondents self-identifying as white to drop out of the model.[57]

[57] The sample size is smaller than 9,326 because we excluded people who refused to answer specific questions, with 2,500 of them being accounted for by the refusal to provide an estimate of income.

Table D–0-2: Predictors of the Composite Program Variable – All States Model

Dependent Variable = Composite Program Variable Independent Variables	Coefficient	Standardized Coefficient	t
County Metropolitan Status	0.23	0.03	2.41
County Unemployment Rate	-0.15	-0.15	-12.16
Years using CFL	0.06	0.06	4.43
Current CFLs in storage	0.06	0.08	6.15
Adjusted income <$30,000**	0.39	0.07	5.32
Sq Ft. of Other Box Stores Per person at the County Level***	0.12	0.10	8.30
Sq Ft. of Wal-Mart Per person at the State Level****	-0.50	-0.25	-19.05
English is Primary Language*****	-0.62	-0.05	-3.95
Constant	2.04	n/a	9.19

* Sample Size =6,320; Adjusted R2 = 9%

** Adjusted for the cost of living

*** Other indicates Home Depot, Lowe's, and Menards (where it exists)

**** Wal-Mart shown at the state level to avoid collinearity with the county level variable

***** The survey was fielded in languages other than English in only a few places, so this variable includes some selection bias.

Sensitivity Analyses

The model in Table D–0-3 serves as a sensitivity analyses for the model presented in Table 5-4, allowing us to see the impact of removing "years using CFLs" and "saturation at the beginning of 2008" on 2008 purchases given that these two variables are positively correlated with CFL program activity. The program variable retains its effect on 2008 purchases in the absence of the years using CFL variable, the saturation at the beginning of 2008. Excluding these variables *lowers* the impact of the composite program variable impact slightly from 0.09 to 0.08. In short, controlling for length of time using CFLs and saturation *improved* the program store in the recommended model (Table 5-4).

Table D–0-3: Best 2008 Purchase Model Absent Saturation and Length of CFL Use – Onsite

Variables	Coefficient	90% Confidence Interval		Impact Score
		Low	High	
Composite Program	0.10	0.05	0.15	0.10
Number of Sockets in Home	0.01	0.00	0.01	0.01
Number of Persons in Household	0.10	0.02	0.17	0.10
Self reported as White	0.49	0.17	0.80	0.63
Conducted During Fall Season	0.52	0.27	0.78	0.68
Constant	-0.61	-1.00	-0.21	n/a

* Sample size = 1,047; Pseudo R^2 = 1%.

There is a significant positive composite program effect on current saturation with the exclusion of length of CFL use (Table D–0-4). The composite program coefficient increases slightly (from 1.67 to 1.82) in the absence of the length of CFL use variable while the explained variance is reduced by a single percent. There other explanatory variables also change slightly but all remain significant predictors of current saturation. Thus, length of CFL use removed slight explanatory power from the model, but it also slightly strengthened the composite program variable.

Table D–0-4: Best Current Saturation Model Absent Length of CFL Use – Onsite*

Variables	Coefficient	90% Confidence Interval	
		Low	High
Composite Program	1.98	1.50	2.50
Pay Utility Bill Directly	11.78	9.22	14.34
County Unemployment Rate	5.59	4.10	7.09

* Sample size = 1,094

Table D–0-5 depicts the best current use model without current saturation or length of CFL use in the model. The onsite composite program impact is very similar in the absence of length of CFL use changing from 0.03 to 0.06. Again, we see that removing these variables from the model does have an impact on the program score, but it remains a minor predictor of CFL use and the explanatory power of the model suffers, also slightly.

Table D–0-5: Best Current Use Model Absent Saturation Length of CFL Use –Onsite

Variables	Coefficient	90% Confidence Interval		Impact Score
		Low	High	
Composite Program	0.06	0.04	0.08	0.06
Homeowner	0.68	0.54	0.83	0.98
Home Size	0.23	0.14	0.33	0.26
White	0.29	0.12	0.46	0.34
English	-0.18	-0.50	0.14	-0.17
Sqft Wal-Mart per Household (state)	0.06	0.02	0.10	0.06
High School Degree or Less	-0.21	-0.34	-0.08	-0.19
Constant	1.13	0.78	1.48	n/a

* Sample size = 1,315 and pseudo R^2 = 2%.

Advanced Telephone Survey Model Results

The MR Team also presents three sets of telephone survey based models, one focused on 2008 purchases, one on purchases in the past three months, and one on current use (Table D-6, Table D-7, and Table D-8). Because we believe the telephone data are less reliable, we focus here only on the fact that 2008 purchases of CFLs were self-reported to be *lower* in areas with stronger programs than in those with no programs or newer or moderate ones. Similarly, the model for

purchases in the past three months finds no program effect at all. A positive program effect, however, was found on self-reported estimates of current use. Again, we stress that the telephone survey data have been shown to be less reliable, and we urge the reader to focus on the more reliable results from the onsite surveys.

Table D-6: Best Fit 2008 Purchase Model – Telephone*

Variables	Coefficient	90% Confidence Interval		Impact Score
		Low	High	
Composite Program	-0.03	-0.04	-0.01	-0.03
Years Using CFLs	0.04	0.02	0.06	0.04
CFLs Currently in Storage	0.16	0.14	0.17	0.17
Homeowner	0.36	0.23	0.49	0.43
Sqft Wal-Mart per Household (state)	0.14	0.10	0.18	0.15
Female Respondent	-0.19	-0.29	-0.09	-0.17
High School Diploma or less	-0.32	-0.44	-0.21	-0.28
County unemployment rate	0.04	0.02	0.06	0.04
Partisan Voting Index 2008**	-0.01	-0.01	0.00	-0.01
Constant	-0.29	-0.51	-0.06	n/s

* sample size = 8,880; Pseudo R^2 = 2%

** Positive relationship indicates higher use in areas with greater Republican leaning

Table D-7: Best Fit Three Month Purchase Model – Telephone*

Variables	Coefficient	90% Confidence Interval		Impact Score
		Low	High	
Years Using CFLs	0.10	0.06	0.14	0.11
Number of Incandescents Bought**	0.02	0.01	0.03	0.02
Homeowner	0.56	0.29	0.83	0.75
Home Size	0.20	0.04	0.36	0.22
English is Primary Language	-0.01	-0.02	-0.01	-0.01
Conducted in the Fall	1.18	0.98	1.39	2.26
Female Respondent	-0.24	-0.45	-0.02	-0.21
High School Diploma or less	-0.47	-0.69	-0.25	-0.37
County Unemployment Rate	0.05	0.01	0.09	0.05
Constant	-2.30	-2.81	-1.79	n/a

* Sample size = 6,555; pseudo R^2 = 2%

** In the past three months

Table D-8: Best Fit Current Use Model – Telephone*

Variables	Coefficient	90% Confidence Interval		Impact Score
		Low	High	
Composite Program	0.03	0.02	0.04	0.03
Years Using CFLs	0.19	0.17	0.21	0.21
CFLs Currently Stored in the Home	0.14	0.12	0.15	0.15
Homeowner	0.37	0.29	0.44	0.44
Home Size	0.20	0.15	0.26	0.23
Self reported as White	0.24	0.15	0.32	0.27
Female Respondent	-0.09	-0.15	-0.03	-0.09
High School Diploma or Less	-0.23	-0.30	-0.17	-0.21
County Level Unemployment	0.02	0.00	0.03	0.02
Partisan Voting Index 2008**	<0.01	<0.01	<0.01	<0.01
Constant	-0.09	-0.04	0.28	n/a

* Sample size = 7,898; pseudo R^2 = 5%

** Positive relationship indicates higher use in areas with greater Republican leaning

Appendix L

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Appendix M

State-Level CFL User Survey Findings for the Comparison Area

Appendix M: State-Level CFL User Survey Findings for Comparison Area

1. Introduction

This memo summarizes selected findings from the CFL User surveys that were fielded as part of the Residential Retrofit study, conducted on behalf of the California Public Utilities Commission (CPUC) by the Cadmus Group, KEMA, and NMR Group. The findings presented here are from surveys in three comparison states—Georgia, Kansas, and Pennsylvania and are weighted to represent the demographic characteristics in each of those states. The data in this memo is presented to supplement survey findings that were presented under separate cover as part of the CFL Program and Market Evolution Report.[1] The key topics addressed in this memo include the following:

1. Awareness and familiarity with CFLs
2. Recent purchases of CFLs
3. Use and storage of CFLs
4. Satisfaction with CFLs
5. Respondent demographics

2. Methodology

Respondents to the survey in the three comparison states—Georgia, Kansas, and Pennsylvania were selected through random-digit dialing (RDD). All respondents were responsible for purchasing light bulbs for their household. The surveys targeted a minimum of 100 respondents who had purchased CFLs in the past three months in each of the comparison states. The status of other groups of interest—including CFL purchasers from 2006 through 2008, non-users, non-purchasers, and those unaware of CFLs was monitored—but no quotas were set. Table M- 1 shows the final disposition of all calls in the comparison area that were completed and attempted for this project. The surveys were conducted by PA Consulting, using computer-assisted telephone interviewing (CATI) from October 6 through November 23, 2008.

All survey data are weighted to represent households in each state. The weighting scheme is based on tenancy (owner/renter status) and the educational status of respondents, variables that help to predict lighting purchase patterns. Our reference for weighting is the 2008 U.S. Bureau of the Census American Community Survey (ACS).[2]

[1] That report provided a more comprehensive analysis of this data and compared survey findings from households in California IOU service territories (collectively, not separately) to a Comparison Area, which was a composite of survey data from Georgia, Kansas, and Pennsylvania—states that have no concentrated or sustained program activity to promote CFLs. All data in that report were weighted by the demographic characteristics of the California IOU service territory, as well as the number of households in that area, to facilitate comparison. The Comparison Area was intended to represent California in the absence of any IOU program activity that promotes CFLs. In California only, versions of the survey were repeated over the course of a year.

[2] *American Community Survey.* "2008 Survey Multi-year Profiles for Georgia, Kansas, and Pennsylvania." U.S. Census Bureau http://factfinder.census.gov. Accessed February, 2010.

Table M- 1: Final Disposition of Telephone Surveys in Comparison States

State	Measure	W2 Completes	W2 Target Completes	W2 Percent Completed	W2 Incidence Rate*	W2 Completed Interviews	W2 Hard Refusals	W2 Lighting Recruits	W2 Missing/Non-working number	W2 Language Barrier
KS	Unaware	28	N/A	N/A	5%	525	824	175	860	16
	Non-Purchaser	106	N/A	N/A	20%					
	Non-User	103	N/A	N/A	20%					
	3mo CFL Purchaser	106	100	106%	20%					
	06-08 CFL Purchaser	281	N/A	N/A	54%					
	3mo Incandescent Purchaser (Maximum)	186	200	93%	35%					
PA	Unaware	45	N/A	N/A	7%	653	1042	227	639	22
	Non-Purchaser	131	N/A	N/A	20%					
	Non-User	136	N/A	N/A	21%					
	3mo CFL Purchaser	103	100	103%	16%					
	06-08 CFL Purchaser	331	N/A	N/A	51%					
	3mo Incandescent Purchaser (Maximum)	230	200	115%	35%					
GA	Unaware	53	N/A	N/A	9%	579	1303	203	1585	31
	Non-Purchaser	118	N/A	N/A	20%					
	Non-User	122	N/A	N/A	21%					
	3mo CFL Purchaser	97	100	97%	17%					
	06-08 CFL Purchaser	298	N/A	N/A	51%					
	3mo Incandescent Purchaser (Maximum)	208	200	104%	36%					

3. Awareness and Use of Energy-Efficient Lighting

The overwhelming majority of respondents are aware of CFLs (Figure M- 1). Between 69% (in KS) and 73 % (in GA) of respondents are very familiar or somewhat familiar with CFLs (Table M- 2).

Figure M- 1. Awareness of CFLs
(base – all respondents, KS n =525, PA n=653, GA n=579)

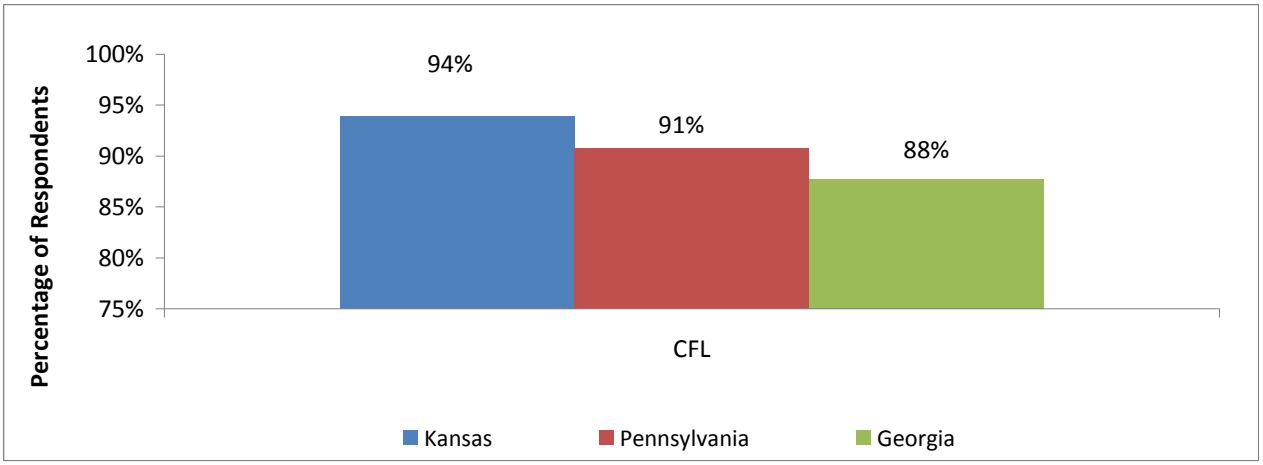

Table M- 2. Level of Familiarity with CFLs
(base – all respondents; results weighted to households in each state)

	Kansas	Pennsylvania	Georgia
n	525	653	579
Very familiar – 1	33%	31%	37%
Somewhat familiar – 2	36	40	36
Slightly Familiar – 3	25	22	20
Not at all familiar – 4	5	6	6
Don't know/Refused	1	1	1

Figure M- 2 shows that 68% of KS respondents, 65% of PA respondents, and 61% of GA respondents are currently using CFLs. Figure M- 3 illustrates when respondents first tried CFLs. KS, PA, and GA adoption patterns are similar across the past twenty years with a noted spike in adoption during 2006 and 2007 across all three states.

Figure M- 2.: Use of CFLs
(base – all respondents)

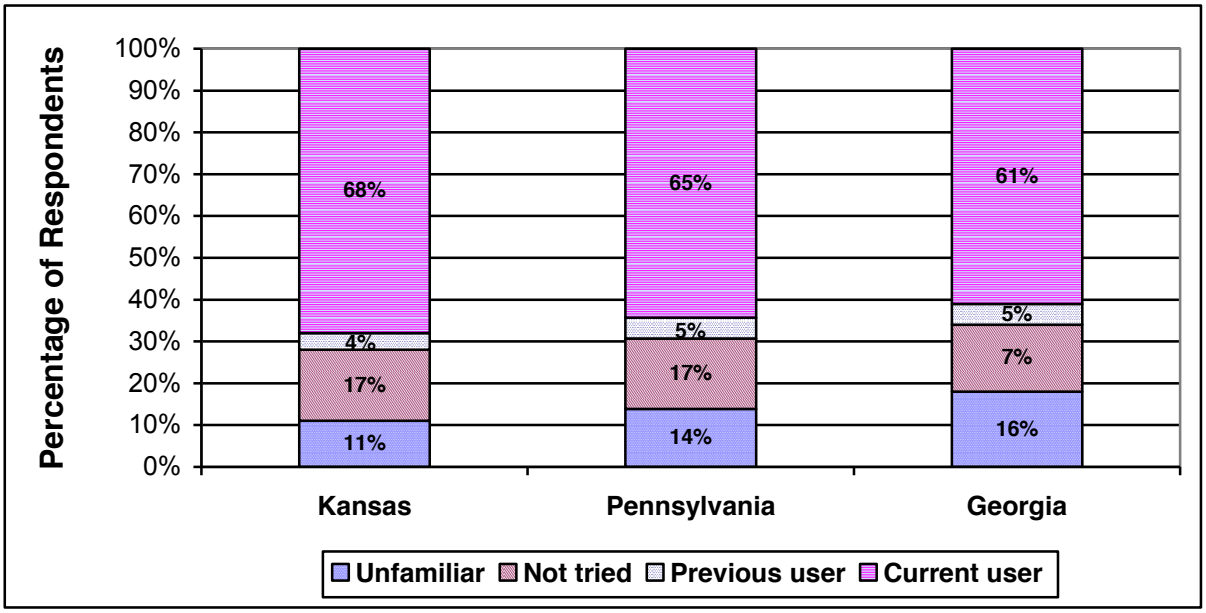

Figure M- 3. First Use of CFLs
(base –respondents who have tried or currently use CFLs, n = 1,251)

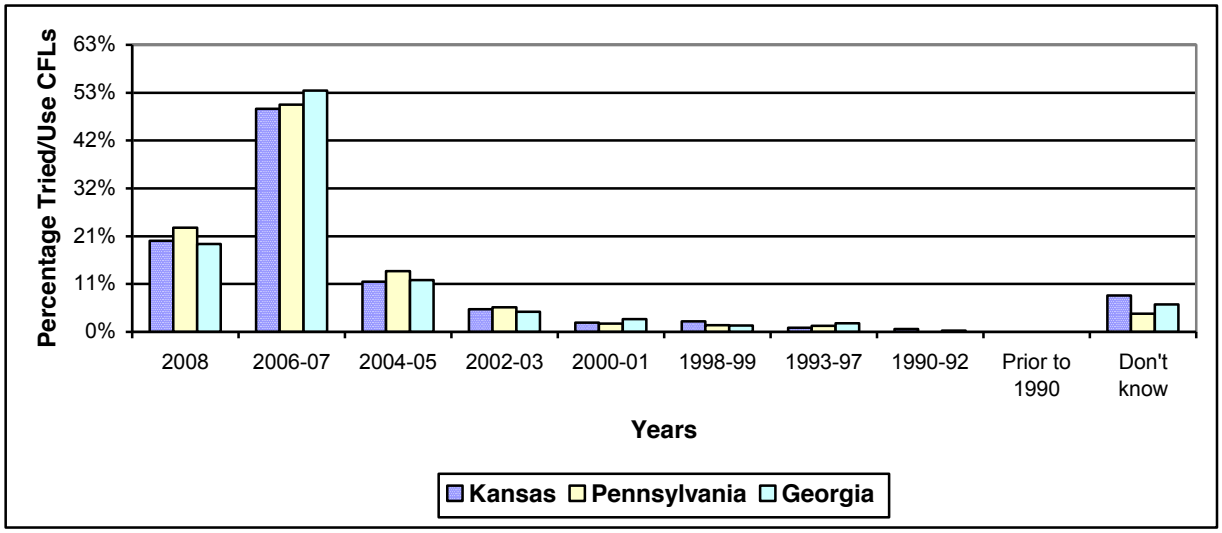

Table M- 3 and Table M- 4 list the number of CFLs currently installed and the number installed three months prior to the survey. The average number of CFLs installed in KS and GA increased over the three months period, with KS going from an average of eight to nine CFLs and GA jumping from five to 12 CFLs installed.

Table M- 3. Number of CFLs Currently Installed in Household
(base –current users of CFLs)

	Kansas	Pennsylvania	Georgia
n	345	448	377
1 or 2	15%	8%	17%
3 or 4	22	20	15
5 or 6	16	18	12
7 or 8	11	10	9
9 or 10	9	10	10
11 to 20	18	21	25
Over 20	8	4	12
Average number CFLs for users	9	7	12
Same number installed 3 months ago	84%	80%	80%

Table M- 4. Number of CFLs Installed 3 Months before Survey
(base –current users of CFLs)

	Kansas	Pennsylvania	Georgia
n	345	448	377
1 or 2	27%	33%	12%
3 or 4	27	27	37
5 or 6	19	17	16
7 or 8	12	5	5
9 or 10	0	9	0
11 to 20	12	12	17
Over 20	1	0	5
Average number CFLs	8	8	5

4. Recent Bulb Purchases

Over 70% of respondents in KS, PA, and GA have installed the bulbs they had purchased in the past three months (Table M- 5). Of the KS respondents who installed CFLs in the past three months 11% of them installed bulbs they had not purchased in the past 3 months, 5% of PA

respondents installed bulbs that were not purchased in the past three months and 7% of GA respondents installed bulbs in the past three months that were not purchased in the past three months (Table M- 6).

Table M- 5. Number of CFLs Purchased in the Past 3 Months and Currently Installed
(base –those who purchased CFLs)

	Kansas	Pennsylvania	Georgia
n	101	102	97
0	26%	19%	23%
1 or 2	26	31	26
3 or 4	28	17	28
5 or 6	6	13	7
7 or 8	6	3	4
9 or 10	7	9	5
11 to 20	1	8	6
Average	4	6	5

Table M- 6. Installed CFLs in the Past 3 Months Other Than Those Purchased in Past 3 Months
(base –current users of CFLs)

	Kansas	Pennsylvania	Georgia
n	345	448	377
Yes	11%	5%	7%
No	85	91	93
Don't Know	3	3	0

5. Bulb Storage

Respondents in KS and PA are storing an average of four CFLs, while GA respondents are storing an average of five bulbs (Table M- 7). Approximately three-quarters of the respondents in all three states are currently storing the same number of bulbs as they were three months ago (Table M- 8). On average respondents across the three states who were storing a different number of CFLs three months ago compared to a year ago were storing zero bulbs (Table M- 9).

Table M- 7. Storage of CFLs
(base –CFL users)[a]

	Kansas	Pennsylvania	Georgia
n	345	448	377
Average # in storage	4	4	5
Number of CFLs currently in storage	945	1,075	979

[a] Don't know responses removed from analysis.

Table M- 8. Storing Same Number of CFLs in the Past 3 Months as Storing Currently
(base –current users of CFLs)

	Kansas	Pennsylvania	Georgia
n	345	448	377
Yes	75%	74%	74%
No	25	24	24

Table M- 9. Storage of CFLs 3 Months Ago
(base – respondents who are storing a different # than they were a year ago)[a]

	Kansas	Pennsylvania	Georgia
n	293	385	326
Average # in storage, those who tried/now use CFLs	0	0	0
Number of CFLs currently in storage	133	137	162

[a] Don't know responses removed from analysis.

The overwhelming majority—90% in KS, 93% in PA, and 94% in GA—are storing CFLs for future use (Table M- 10). Of the CFLs that have been purchased in the past three months, an average of three bulbs (KS), five bulbs (PA), and three bulbs (GA) are currently being stored (Table M- 11). Of the bulbs that are not being stored and are not in use, 24% (KS), 41% (PA), and 23% (GA) have burned out (Table M- 12). Across the three states, other common dispositions of bulbs not in storage or in use are that they have been given away or are in use at another home.

Table M- 10. Reason for Storing CFLs
(base –current users of CFLs currently storing CFLs)

	Kansas	Pennsylvania	Georgia
N	244	268	240
For future use	90%	93%	94%
Don't fit/work in application	9	6	5
Don't' know/Refused	1	1	1

Table M- 11. Storage of CFLs that had been Purchased in Past 3 Months
(base – respondents who purchased CFLs in past 3 months)[a]

	Kansas	Pennsylvania	Georgia
n	80	69	74
Average # in storage, those who tried/now use CFLs	3	5	3
Number of CFLs currently in storage	197	266	186

[a] Don't know responses removed from analysis.

Table M- 12. Disposition of CFLs that are not in use and not in Storage
(base – purchasers of CFLs with CFLs not in use and not in storage)

	Kansas	Pennsylvania	Georgia
n	57	48	50
Burned out	24%	41%	23%
Gave them away	17	8	10
Using at another home	13	7	16
Using them at work	5	0	9
They broke	5	10	5
Storing at another home	3	2	0
Installed but later removed	1	2	0
Storing them at work	0	0	1
Returned them	0	4	0
Other	18	6	20
Don't know/Refused	16	20	26

Table M- 13. Number CFLs that are not in use and not in Storage
(base – purchasers of CFLs with CFLs not in use and not in storage)

	Kansas	Pennsylvania	Georgia
n	57	48	50
Burned out average	3.2	3.1	3.25
Burned out sum	38	62	34
Using at another home average	5.7	3.7	5.7
Using at another home sum	31	12	56
Storing at another home average	10	0.9	0
Storing at another home sum	13	2	0
Using them at work average	2	0	0
Using them at work sum	3	0	0
Gave them away average	2.8	2.8	7.2
Gave them away sum	24	11	44
They broke average	1.0	1.5	1.2
They broke sum	4	7	3
Returned them average	0	1.5	0
Returned them sum	0	3	0
Other average	2.6	2.2	5.2
Other sum	33	12	57

6. Recent Bulb Purchases

Mass merchandise stores were the most popular place for KS and PA respondents to purchase CFLs in the past three months while large home improvement stores were the most popular for GA respondents (Table M- 14). Over three-quarters of respondents across all three states who purchased CFLs in the past three months purchased one or two packages (Table M- 15). Of the respondents who purchased CFLs in the past three months, 22% in KS, 20% in PA and 25% in GA purchased packages of CFLs with five or more bulbs (Table M- 16).

Table M- 14.Type of Store Where CFLs were Purchased in the Past 3 Months
(base – purchasers of CFLs in past three months)

	Kansas	Pennsylvania	Georgia
n	80	83	80
Mass Merchandise store	28%	32%	0%
Grocery Store	24	12	15
Small Hardware Store	20	11	0
Discount Store	18	15	10
Large home improvement store	8	11	44
Lighting or electronics store	2	4	0
Membership club store	0	4	0
Other	0	11	26

Table M- 15.Number of CFL Packages Purchased in the Past 3 Months
(base – purchasers of in past three months)

	Kansas	Pennsylvania	Georgia
n	80	83	80
0	1%	1%	0%
1or 2	81	77	81
3 or 4	6	17	6
5 or 6	5	3	5
7 or 8	2	2	3
9 or 10	0	0	1
More than 10	0	0	2

Table M- 16: Number of CFLs in the Packages Purchased in the Past 3 Months
(base – purchasers of CFLs in the past 3 months)

	Kansas	Pennsylvania	Georgia
n	80	83	80
1	25%	26%	29%
2	19	16	17
3	11	17	15
4	25	20	13
5	4	1	4
6	13	14	10
7	0	0	0
8	4	1	5
9	0	0	2
10 or more	1	4	4

Across all three states, mass merchandise stores are the most popular place for respondents to purchase incandescent bulbs (Table M- 17). Grocery stores and large home improvement stores are also popular places for respondents to purchase incandescents.

Table M- 17: Type of Store where Incandescents Were Purchased in the Past 3 Months
(base – all respondents)

	Kansas	Pennsylvania	Georgia
n	525	653	579
Mass merchandise store	44	47	35
Grocery store	20	20	19
Large home improvement store	17	14	18
Small hardware store	9	8	5
Discount store	6	7	13
Lighting and electronics store	1	1	2
Drug store	1	1	2
Other	3	2	3

On average respondents in KS and GA purchased one bulb that was not a CFL in the past three months, while PA respondents purchased an average of two bulbs that were not CFLs (Table M-18).

Table M- 18: Number of Other Bulbs Purchased in the Past 3 Months
(base – all respondents)

	Kansas	Pennsylvania	Georgia
n	525	653	579
0	74%	71%	74%
1 or 2	11	13	11
3 or 4	6	8	7
5 or 6	2	2	3
7 or 8	1	1	1
9 or 10	1	1	1
11 to 20	<1	<1	2
More than 20	4	4	1
Don't know/Refused	3	2	2
Average	1	2	1

7. Status of CFLs Purchased in Past Three Months

Table M- 19, Table M- 20, and Table M- 21 describe the status of CFLs purchased in the past three months. A small portion of respondents (8% in KS, 11% in PA, and 10% in GA) removed the CFLs before they had burnt out. Respondents in KS, PA, and GA consistently cite the CFL as not being bright enough and not liking the color as the reasons for removing CFLs. In each of the three states, over 50% of the CFLs that were removed were replaced with incandescent bulb. The second most popular replacement option was another CFL.

Table M- 19. Removed CFL before they Burned Out
(base –CFLs user)

	Kansas	Pennsylvania	Georgia
n	345	448	377
Yes	8%	11%	10%
No	91	88	87
Don't know/Refused	1	1	3

Table M- 20. Reason for Removing CFL
(base –CFLs users CFLs not in use and not in storage)

	Kansas	Pennsylvania	Georgia
n	46	48	50
Wasn't bright enough	20%	23%	25%
Didn't like color	8	11	17
Long start up time	6	6	2
Didn't like the way it looked	4	5	6
Didn't fit	4	0	2
Made noise	4	1	4
Didn't work with dimmer switch	4	5	6
Wasn't available in three-way	4	1	2
Other	45	45	65

Table M- 21. Bulb used to Replace Removed CFL
(base – purchasers of CFLs with CFLs not in use and not in storage)

	Kansas	Pennsylvania	Georgia
n	46	48	50
Incandescent	59%	51%	56%
CFL	33	41	33
None	3	0	0
Specialty	0	3	2
LED	0	0	2
Don't know	5	5	8

8. Satisfaction

The survey asked respondents to rate their satisfaction with a number of attributes related to CFLs using a scale of 0 to 10, with 0 being 'not at all satisfied' and 10 being 'very satisfied.' As Table M- 22 shows, KS, PA, and GA respondents give high overall satisfaction ratings to CFLs currently in their homes. They also give high ratings to how long a CFL lasts before burning out and having a constant light output/no flickering. Respondents give the lowest satisfaction ratings to CFL price.

Table M- 22. Satisfaction with Factors Related to CFLs, Average Rating
(base – respondents who previously used or currently use CFLs)[a]

	Kansas	Pennsylvania	Georgia
n	379	449	382
Overall satisfaction with CFLs currently in home	8.2	8.4	8.8
How long CFLs last before burning out	8.9	9.0	9.1
Constant light output/no flickering	8.8	8.8	9.3
Fit in light fixtures	8.3	8.4	8.6
Color of light	7.8	8.0	8.5
Brightness of light	7.8	8.0	8.6
Amount of time to light up	7.6	8.0	8.3
Look in light fixtures	7.3	8.4	7.9
Price	6.9	7.1	7.2

[a] Don't know responses removed from the analyses.

9. Demographics

Over four-fifths of respondents in all three states own their homes (Table M- 23). The majority of respondents in KS (85%), PA (77%), and GA (84%) live in single family detached residences (Table M- 24). The residence was built after 1990 for 21% of KS respondents, 16% of PA respondents, and 40% of GA respondents (Table M- 25). Homes that are more than 2,000 square feet accounted for 25% of KS homes, 21% of PA homes, and 36% of GA homes (Table M- 26). Homes across all states have an average of three bedrooms, two bathrooms, and three other rooms in the home (Table M- 27, Table M- 28, and Table M- 29).

Table M- 23. Home Ownership Status
(base – all respondents; survey data unweighted)

	Kansas	Pennsylvania	Georgia
N	525	653	579
Own	86%	84%	84%
Rent	13	14 σ	14 σ
Don't know/Refused	1	2	2

Table M- 24. Type of Residence
(base – all respondents; survey data unweighted)

	Kansas	Pennsylvania	Georgia
N	525	653	579
Single family detached	85%	77%	84%
Townhouse or row house	6	11	4
Apartment or condo	5	7	6
Mobile home	3	3	3
Other	<1	1	1
DK/Refused	1	1	2

Table M- 25. Year of Construction
((base – all respondents; survey data unweighted))

	Kansas	Pennsylvania	Georgia
N	525	653	579
After 1999	9%	6%	21%
Between 1995 and 1999	6	5	10
Between 1990 and 1994	6	5	9
Between 1980 and 1989	13	10	15
Between 1970 and 1979	13	11	12
Before 1970	44	55	21
DK/Refused	7	8	12

Table M- 26. Square Footage of Home
(base – all respondents; survey data unweighted)

	Kansas	Pennsylvania	Georgia
N	525	653	579
Less than 500 square feet	1%	1%	<1%
501-1000	6	5	3
1001 to 1500 square feet	19	12	12
1501 to 2000 square feet	20	15	18
2001 to 2500 square feet	12	10	15
2501 to 3000 square feet	5	5	11
More than 3000 square feet	8	6	11
DK/Refused	29	46	30

Table M- 27. Number of Bedrooms
(base – all respondents; survey data unweighted)

	Kansas	Pennsylvania	Georgia
N	525	653	579
0	0%	0%	<1%
1	5	4	3
2	17	20	13
3	45	46	47
4	21	23	27
5 or more	11	6	8
DK/Refused	1	1	2
Average	**3**	**3**	**3**

Table M- 28. Number of Bathrooms
(base – all respondents; survey data unweighted))

	Kansas	Pennsylvania	Georgia
N	525	653	579
1	29%	31%	16%
2	39	43	43
3	22	18	26
4	5	4	10
5 or more	4	3	3
DK/Refused	1	1	2
Average	**2**	**2**	**2**

Table M- 29. Number of Other Rooms
(base – all respondents; survey data unweighted)

	Kansas	Pennsylvania	Georgia
N	525	653	579
0	1%	1%	1%
1	1	2	2
2	20	16	17
3	30	34	29
4	29	26	27
5 or more	17	19	21
DK/Refused	2	2	3
Average	**3**	**3**	**3**

There is an average of two persons in each home in all three states (Table M- 30). Around three-fifths of homes do not have anyone under the age of 18 in the home, while three-fifths of the states have two people in the home between the ages of 19 and 64 (Table M- 31).

Table M- 30. Number of People in Home Year Round
(base – all respondents; survey data unweighted)

	Kansas	Pennsylvania	Georgia
N	525	653	579
1	23%	23%	18%
2	40	37	40
3	13	14	17
4	13	15	14
5	6	6	6
6	2	2	2
7 or more	1	1	1
DK/Refused	2	2	3
Average	**2**	**2**	**2**

Table M- 31. Number of People in Home by Age Group
(base – all respondents; survey data unweighted)

		Kansas	Pennsylvania	Georgia
N		525	653	579
Under 18 years	0	58%	60%	60%
	1	14	14	16
	2	17	18	16
	3	8	4	6
	4 or more	3	3	1
19 to 64	0	19%	16%	16%
	1	10	9	10
	2	62	57	59
	3	8	14	10
	4 or more	<1	4	5
65+	0	73%	75%	75%
	1	6	7	9
	2	20	18	16
	3	0	1	<1
	4 or more	0	0	0

Respondents with a college degree or graduate school degree account for 40% of KS respondents, 35% of PA respondents, and 43% of GA respondents (Table M- 32). Fewer than 3% of respondents in any state earned more than $150,000 a year while about a third of respondents earned less than $49,999 (Table M- 33).

Table M- 32. Educational Attainment
(base – all respondents; survey data unweighted)

	Kansas	Pennsylvania	Georgia
N	525	653	579
Less than high school grad	5%	4%	7%
High school grad	23	32	22
Some college or Technical/Trade School grad	26	24	24
College graduate or Some graduate school	29	23	26
Graduate degree	11	12	17
Don't know/refused	6	5	3

Table M- 33. Income Level
(base – all respondents; survey data unweighted)

	Kansas	Pennsylvania	Georgia
N	525	653	579
Under $20,000	10%	10%	10%
$20,000 to $49,999	25	27	20
$50,000 to $74,999	19	17	14
$75,000 to $99,999	11	10	12
$100,000 to $149,999	7	1	5
$150,000 and over	2	3	3
Don't know/Refused	26	27	26

The overwhelming majority of respondents across all three states are not Hispanic (Table M-34). Over 90% of the respondents in KS, PA, and GA are English speakers (Table M- 35). Finally, as shown in Table M- 36, there were more female than male respondents in all three states.

Table M- 34. Spanish/Hispanic/Latino
(base – all respondents; survey data unweighted)

	Kansas	Pennsylvania	Georgia
N	525	653	579
Yes	4%	3%	5%
No	94	94	93
Don't know/refused	2	3σ	2

Table M- 35. Language
(base – all respondents; survey data unweighted)

	Kansas	Pennsylvania	Georgia
N	525	653	579
English	95%	96%	93%σ
Spanish	2	1	3
Other	1	2	1
DK/Refused	2	1	3

Over half of the respondents in all three states are female (Table M- 36).

Table M- 36. Gender
(base – all respondents; survey data unweighted)

	Kansas	Pennsylvania	Georgia
N	525	653	579
Female	55%	61%	61%
Male	45	39	39

Appendix N

Responses to Public Comments on the Draft CFL Market Effects Final Report

Responses to Public Comments on draft CFL Market Effects Final Report

No.	Author	Subject	Sec / Page	Comment	Response
1.	NRDC--Max Baumhefner	"Net effects" recommendation	109	The report should better define its recommendation that the Protocol be modified to estimate "total net effects." On p. 109, the report states: "In light of the challenges inherent in modeling the market effects attributable to upstream energy-efficiency programs, we suggest the Protocol allow for the estimation of total net effects for upstream programs rather than focusing solely on nonparticipant spillover." The report appears to use the phrase "total net effects" with multiple intended meanings. The report should define this term more clearly, especially in the context of this recommendation, and provide further discussion of the possible implications of this recommendation. For example: Is this a suggestion that the calculation of the Net-to-Gross Ratio of upstream programs include spillover (see p.84)? Is the proposed modification meant to solve the challenge of modeling market effects? Or does this recommendation suggest moving away from the current goal of quantifying market effects in order to answer a different question?	The team uses the term "total net effects" to mean a net-to-gross ratio that is inclusive of free ridership, participant spillover, and non-participant spillover. Some net effects estimation techniques, such as the regression modeling used in this evaluation, are unable to disaggregate free-ridership, participant spillover, and nonparticipant spillover. From an analytical perspective, the team therefore recommends the protocols for future market effects studies for upstream programs allow estimation techniques (such as regression modeling) that cannot disaggregate these effects. This is not to say that free-ridership, participant spillover, and nonparticipant spillover should always be combined, but rather the team recommends that the CPUC allow them to be combined if the best available analytical techniques do not allow for estimating each separately.
2.	NRDC--Max Baumhefner	Price discrepancy and remaining potential	99	In supporting its conclusion that the CFL market would be sustainable absent IOU programs, the report answers affirmatively the question: "Would there be sufficient consumer demand without regional program support?" The report concludes there would be sufficient demand, and cites a survey determining that "35% of CA households would replace the next burned out incandescent with a CFL and 88% would replace the next burned out CFL with another CFL." However, survey respondents presumably based their answers on a world in which most CFLs are $2.70 cheaper than they would be absent program support (see p. 61 of report). Please clarify in the final report how the survey accounted for this price discrepancy.	The Consumer Survey did not include price as a factor in characterizing future usage, although the conjoint analysis study (performed as part of the Residential Retrofit evaluation) determined that the price elasticity for standard twister CFLs may be quite low (i.e., a steep increase in price may not have a correspondingly large decrease in sales). There is historical evidence nationwide that the price of CFLs has declined over the past decade and demand for CFLs has increased. In fact, this study found that despite a roughly $2.60 average price difference between CA's program-discounted CFLs and CFLs in the Comparison Area, CFL sales per household in the fall of 2008 were higher in the Comparison Area than they were in California. We therefore believe that while CFL sales in CA may be lower in the absence of program support, the CFL market would remain sustainable.

No.	Author	Subject	Sec / Page	Comment	Response
3.	NRDC--Max Baumhefner	Price discrepancy and remaining potential	99	In addition, the report's statement that buy-down programs for "plain vanilla" CFLs may have run their course does not adequately account for the price impact of IOU programs and the large remaining potential for CFL adoption (As the noted on p. 108, CFLs occupy only 21% of all sockets). Please address how removing price support would impact the pace at which that remaining potential is tapped.	Our recommendation is not that IOU program support for CFLs should stop altogether, rather that the buy-down approach for standard CFL twisters that targets consumer groups previously identified as likely to purchase CFLs may have run its course. We recognize there is a large remaining potential for CFLs and suggest future IOU programs be designed to capture this potential using a combination of price support, targeted outreach, and educational support, including: • Continuing the buy-down approach for specialty CFLs, • Conducting aggressive resource acquisition efforts, • Aggressively targeting consumer groups that have been identified as least likely to purchase and install CFLs, and • A strong educational component informing customers about the range of CFL product options, appropriate CFL applications, safe CFL disposal methods, etc. (See p. x, p. 103, and p. 108 in the report). Note that these recommendations come from the study's authors and are based on the study's findings. Decisions about programmatic changes are beyond the scope of this study. Independent of whether or not price support continues, it is likely that some of the remaining potential for CFLs will not be realized without first overcoming current customer perception and technological hurdles (e.g., continuing customer dissatisfaction with CFLs, reliability of dimmable CFLs). Additionally, some of the remaining potential exists in sockets with low hours of use or in sockets with specialty bulbs, so the implementation of lighting standards and/or the availability of specialty CFLs that are price-competitive (on a first-cost basis) with incandescents will be needed to capture the energy savings potential from these sockets. The cost-effectiveness of price support for spiral CFLs that might be used in sockets with low hours of use may need to be reexamined.

No.	Author	Subject	Sec / Page	Comment	Response
4.	NRDC--Max Baumhefner	Market sustainability	99	The fact that some manufacturers are unlikely to backslide does not mean that consumers will not choose inefficient incandescents over CFLs lacking price support. In supporting its conclusion that the CFL market would be sustainable absent IOU programs, the report answers affirmatively the question: "Would it be difficult or costly to revert to earlier equipment—that is, going back to incandescents?" The report cites the following in support of this proposition: "Manufacturers said they have increased CFL production capacity." While it is true manufacturers will likely not abandon investments in CFL production capacity, this ignores the fact that there is still a much larger productive capacity for inefficient incandescents that would gladly supply any demand shift away from CFLs.	The current level of CFL sales in the Comparison Area (see pp. 74-76 in the report) suggests that the CFL market is sustainable without program support. Again, the conjoint analysis study (performed as part of the Residential Retrofit evaluation) determined that the price elasticity for standard twister CFLs may be quite low (i.e., a steep increase in price may not have a correspondingly large decrease in sales). However, we recognize that a substantial scaling back or the complete removal of program supported discounts for, and education about, standard CFL twisters may result in some decline in CFL sales in California. Should the programs be radically altered, we recommend that CFL sales activity continue to be closely tracked. In terms of manufacturer production capacity, there are other forces, such as the United Nations Development Programme "Phasing-out Incandescent Lamps and Energy Saving Lamps Promotion Project," which are also shifting the production capacity away from incandescents and towards higher quality CFLs. (http://www.undp.org.cn/projects/00062179.pdf)
5.	NRDC--Max Baumhefner	Market sustainability	99	Furthermore, the report states that "81% (of CFL) manufacturers said production costs would increase without IOU programs due to loss of economies of scale/need to seek out other markets." Given that CFL manufacturers would see increased costs, and consumers could easily switch to cheaper incandescents, the fact that it would be costly for some manufacturers to go backwards should not underpin a conclusion that the CFL market is sustainable absent IOU programs.	This study found that despite a roughly $2.60 average price difference between CA's program-discounted CFLs and CFLs in the Comparison Area, CFL sales per household in the fall of 2008 were higher in the Comparison Area than they were in California. Furthermore, the conjoint analysis study (performed as part of the Residential Retrofit evaluation) determined that the price elasticity for standard twister CFLs may be quite low (i.e., a steep increase in price may not have a correspondingly large decrease in sales). Finally, historical evidence nationwide shows that the price of CFLs has declined over the past decade and demand for CFLs has increased.

No.	Author	Subject	Sec / Page	Comment	Response
6.	NRDC--Max Baumhefner	IOU support of EISA		The report should attempt to quantify the impacts of IOU support for federal lighting efficiency standards. California IOUs supported the 2007 EISA, which will ultimately require near-CFL level efficiency for all screw-based bulbs. This upcoming standard is also likely to impact manufacturer and retailer practices in anticipation of the new requirements. To the extent that EISA's lighting standards have already transformed the market, the report should attempt to quantify that effect. CPUC policy credits utilities for a portion of savings resulting from standards and codes which they help develop. California's IOUs were strong advocates for federal standards that affect the national market. A report focused on market effects should address this transformation and the role California's IOUs played in bringing it about.	Through our interviews with trade allies we found: • Corporate-level CFL retailers were generally not familiar with EISA, and • CFL manufacturers were divided on the effect they thought EISA would have on CFL sales: roughly 60% said EISA would increase CFL sales (some said sales would increase substantially and others said sales would increase minimally), and 40% said it would have no impact or decrease CFL sales. This study focused on the 2006-08 program period and as such did not measure the impact of EISA on current or future demand. Moving forward, it will be important to include the impacts of EISA on consumer awareness, purchasing, and storage habits; retailer awareness, sales and stocking practices; and manufacturer response (technology development, product lines, production capacity, marketing focus).
7.	NRDC--Max Baumhefner	IOU support of EISA		In so far as EISA has transformed the national market, this also contributes to the inaccuracy of using the comparison area as a proxy for a California absent energy efficiency programs. If EISA has led to savings within the comparison area, the baseline provided by the comparison area is likely artificially high as a result.	The evaluation recognizes the important role California's CFL programs have historically played in the national CFL market. The report explicitly states (see p. viii), "our analysis was likely affected by the finding that the California IOU programs arguably accelerated CFL sales throughout the U.S....[and that] sales for all states--including the comparison states examined as part of this study--may be overestimated because the baseline sales were affected by California's CFL programs." Again, this study focused on the 2006-08 program period. Measurement of EISA impacts will be important moving forward and should be a component of future studies.

No.	Author	Subject	Sec / Page	Comment	Response
8.	NRDC--Max Baumhefner	Federal lighting standards		The report should account for the fact that Federal lighting standards will not be fully implemented until 2020. The report cites the coming implementation of the Energy Independence and Security Act of 2007, or EISA to support its proposition that "plain vanilla" CFL programs may have run their course. However, the report fails to account for the fact that EISA will not require CFL level efficiency until 2020. The "Tier One" standards that will be implemented from 2012-2014 only require a 30% efficiency gain. CFLs will still be two to three times as efficient as the federal code requires until 2020. Discontinuing a successful program 10 years before such savings will be mandated is premature and would leave additional cost effective savings on the table.	Please refer to the response to comment #3 regarding the study's recommendations about programmatic changes. As EISA is phased in, beginning in 2012 with maximum wattage levels at 72 watts (1490-2600 lumen range) for general service lamps, the savings estimates (delta watts) for CFLs promoted through the program will need to be adjusted. By 2020, the EISA standards will be in line with the efficiencies achieved through CFLs (and possibly other technologies). Moving forward, the program may still achieve savings through efficient lighting because there may be incandescents/halogens that meet EISA standards (i.e., about 30% more efficient than current efficacies), but they will still be less efficient than CFLs (and possibly other technologies).
9.	NRDC--Max Baumhefner	Comparison area as a baseline		The report should note that the baseline provided by the comparison states is likely artificially high because the national effects of California's programs were not quantified. The report's assumption that the "comparison area" accurately represents a hypothetical California absent IOU energy efficiency programs (even after demographic weighting) is questionable because it ignores the effects California has had on the national market. While the report provides qualitative evidence that such effects exist by recounting the results of interviews, the report fails to quantify the effect of California's historical or current IOU energy efficiency programs on the comparison states.	The team selected the Comparison Area to represent a hypothetical California—that is, how California's CFL market would have looked in the absence of any CFL programs. However, the evaluation recognizes the important role California's CFL programs have historically played in the national CFL market. The report explicitly states (see p. viii), "our analysis was likely affected by the finding that the California IOU programs arguably accelerated CFL sales throughout the U.S....[and that] sales for all states--including the comparison states examined as part of this study--may be overestimated because the baseline sales were affected by California's CFL programs." Since there is no way to undo California's prior program activity, and since there is no reliable historic data on the effect of California's prior programs on the rest of the country, we cannot accurately quantify the impact the California programs have had nationally. It is also important to note that CFL sales in non-program states were likely influenced by many other factors, including the impacts of aggressive IOU program efforts outside of California (e.g., those in New England), the Wal-Mart initiative, and concern over climate change. These impacts are important baseline effects that are fully captured by the comparison state approach used in the study.

No.	Author	Subject	Sec / Page	Comment	Response
10.	NRDC--Max Baumhefner	Comparison area as a baseline		In addition to the interview results summarized on p. 106, the report should note that California utilities have supplied significant resources to CFL manufactures to reduce the cost of CFLs. These funds have brought CFL manufacturing to scale and facilitated retailer knowledge and practices nationwide. The report should make it clear that national effects likely exist, were not quantified, and that the baseline provided by the comparison area is likely artificially high as a result.	The evaluation recognizes the important role CA's CFL programs have historically played in the national CFL market (see p. viii, p. 94, and p. 107).
11.	NRDC--Max Baumhefner	The importance of this report		The NRDC supports this important effort to evaluate market effects and recognizes the inherent difficulty in quantifying such effects. We appreciate the amount of time and work CPUC staff has spent attempting to answer these difficult, but vital questions.	Thank you for this comment.
12.	PG&E Company	Comments on CFL Market Effect Draft Report	Overall	PG&E would like to thank the CPUC-Energy Division Staff (ED) for sponsoring this important research examining the market effects resulting from the IOUs' upstream CFL lighting program. This effort has helped identify gaps in available data that made it impossible to quantify market effects. PG&E urges the CPUC-ED to ensure that going forward, a sufficient level and quality of data is collected. Quantification of market effects will provide a fuller understanding of the energy savings and other benefits attributable to "upstream" programs. This will help improve resource allocation and implementation of future programs.	We agree the need for ongoing, consistent data collection is an important finding of the study, and the quantification of market effects will provide a broader perspective of the impacts of upstream programs.
13.	PG&E Company	Comments on CFL Market Effect Draft Report	Overall	[The quantificiation of market effects] will also enable future evaluators to better establish a baseline and avoid including market effects and spillover in it. For example, the report states that one of the goals of the evaluation was to quantify the cumulative effects of energy efficiency programs on the CFL market and focused on that concept alone. In other words, the report did not separate market effects and spillover which would have better supported the CPUC's strategic plans to clarify whether savings could be quantified.	This study was directed by the CPUC to examine nonparticipant spillover. Given the difficultly of accurately identifying upstream lighting program customer participants, and the limited data available, the study was not able to separately estimate free-ridership and spillover.

No.	Author	Subject	Sec / Page	Comment	Response
14.	SCE--Shahana Samiullah	CFL Market Effect Draft Final Report	All	The study arrives at conclusions that are quite nuanced, and difficult to credit. Because of timing and data availability issues, combined with CPUC requirements for this study, what is left to investigate empirically is the market impact (non participant spillover) of 2006-2008 IOU program upon 2008 effects. Most of the analysis, the study recognizes, is essentially cross-sectional in nature, and fails to include longitudinal data – the lack of which might properly have lead to delay of the study, or use of the study funds on a fuller review and/or expansion upon studies in other states where "net savings" have been defined more broadly. The study argues that with fuller data, it could have done a better job of estimating cumulative market effects over time (despite the CPUC requirement to truncate this impact to 2006-2008 program). Yet it also argues that its finding from the cross-sectional analysis of recently collected data has provided accurate estimates of the 2008 result, seeming to imply that this result would have been obtained even in the presence of adequate data.	The study included time-series (longitudinal) data where available--i.e., for metrics such as CFL awareness, penetration, saturation, and prices. These are all important market progress indicators. However, the cross-sectional information used to estimate sales data, and thus energy savings, were only available for 2008. Since the customer telephone surveys and follow-up in-home lighting audits were conducted in 2008, we were able to pool these data with comparable data from other regions (for roughly the same time period) to conduct the multi-state regression analysis for 2008. Had the customer phone survey and in-home lighting audit data been collected in 2006 and 2007 in California, the Comparison Area, and the other states/regions participating in the multi-state regression analysis, the regression could have been performed for those years as well.
14a.	SCE--Shahana Samiullah	CFL Market Effect Draft Final Report	All	...the study seems to make some mutually exclusive conclusions all at the same time: the data were inadequate; approaches like this have worked elsewhere; there is essentially anecdotal evidence of a slowdown in sales (albeit the study also mentions the recession and California's saturation levels at various points); market transformation (via "market effects") was occurring in the past but eroded, slowed, or stopped at about the same time that a study with inadequate data and poor timing was initiated.	Our conclusions are not mutually exclusive. As noted in the report, the quantitative sales data were limited to 2008, and thus did not cover the entire 2006-08 program period. Given the rapid and significant changes to the CFL market that occurred in the middle of the 2006-08 program period, and the economic recession that began in the latter half of the 2006-08 time period, the lack of complete data for the period created real challenges for this evaluation. Approaches similar to the approach used in this study have worked (and been accepted in regulatory proceedings) elsewhere.

No.	Author	Subject	Sec / Page	Comment	Response
14b.	SCE--Shahana Samiullah	CFL Market Effect Draft Final Report	All	To have the “market effects spigot” (continuing a “stream of savings” metaphor from the scoping study) suddenly shut off in 2008 is not particularly credible. More credible is that market-transformative changes have been occurring, saturations have been rising, sales shares have been increasing, and there is some evidence of emerging “maturity” in a highly segmented market – a market with vast remaining potential based on socket saturation estimates (arguments about the lower hours of use in the 71% of MSB sockets remaining are not well supported, even in aggregate), as well as evidence of segmentation of “the market.”	We agree that market-transformative changes have been occurring, CFL saturations have been rising, and there is evidence of "maturity' in some segments of CA's CFL market. We also agree that with a MSB CFL saturation of under 30% in CA, there is still a large remaining potential for CFLs, That said, this study generally did not find quantitative evidence of the ULP's effect on CA's CFL market at the end of the 2006-08 program cycle. The one exception was CFL availability: CA retailers devoted more space to CFLs than did their Comparison Area counterparts, and CFL availability was greater in non-traditional CFL retailers (discount, grocery, and hardware stores) in CA than in the Comparison Area. As noted in the report, however, market effects can best be measured by more regular data collection. While a buy-down approach like the ULP may still be viable for specialty CFLs (whose market share has been minimal to date), the study suggests that increasing CFL saturation in CA may require programs with resource acquisition approaches, programs that target the groups least likely to purchase and use CFLs, and continuing consumer education about CFLs. Please refer to the response to comment #3.
14c.	SCE--Shahana Samiullah	CFL Market Effect Draft Final Report	All	The regression study (only an example, see Appendix K), reveals that apart from a methodological control for the timing and content of survey, race (favoring Whites) is the primary determinant of purchase quantity. To argue for an essentially transformed market in the face of this evidence makes little sense in a diverse state like California. It makes more sense to consider California a market undergoing transformation, with evidence on race-, income-, and tenure-related segmentation requiring a somewhat opinionated view of “the market” to sustain the argument for “no more market effects.”	The Team reached this same conclusion in Appendix K and therefore recommended revising the ULP so that it targets "people who do not currently use CFLs...and the venues... at which non-users shop..." We specifically suggest future IOU programs be designed to aggressively target consumer groups that have been identified as least likely to purchase and install CFLs.

No.	Author	Subject	Sec / Page	Comment	Response
14d.	SCE--Shahana Samiullah	CFL Market Effect Draft Final Report	All	Properly performed with adequate data, the study would take as its null hypothesis regarding 2006-08 impacts on 2008 sales a cumulatively estimated historical market impact – and the study "onus" would be on showing that this impact has subsided or increased. We recognize that the data to do this weren't available, but it still doesn't justify the sleight of hand that one hand argues that market impacts have been occurring, and then requires proof against the null hypothesis that they have vanished (not diminished, but vanished).	The study's preponderance of evidence approach employed different surveys, interviews, and analyses covering different portions of the 2006-08 program period. The study was thereby able to reach qualitative and quantitative conclusions about market effects for different portions of the 2006-08 program period based on the available information for that period of time. The research showed (see p. vii), "fairly strong qualitative evidence and some quantitative evidence that there were effects from the ULP at one time (e.g., changes in awareness...attitudes and acceptance of CFLs, CFL availability, and declines CFL prices), [though] most of the analyses of current market conditions yielded no quantitative evidence of market effects at the end of the 2006 to 2008 program cycle." We believe the body of evidence tells a consistent story, namely that (p. vii) "California's programs caused market effects in both California and nationally in the past, [but] these effects have largely eroded over the past two years." While we found the CA ULPs had a small positive effect on CFL purchases in 2008, and a larger effect on current CFL saturation in CA, the evaluation's quantitative analysis did not find evidence of market effects at the end of the 2006-08 program cycle.
14e.	SCE--Shahana Samiullah	CFL Market Effect Draft Final Report	All	The arguments for 0.23 given a substantially larger NOFR impact estimate based on the impact evaluation results are not convincing. They rely upon an essentially unproven argument that program total effects, subsuming but not limited to NOFR estimates, were much higher in 2006 and 2007 than, quite oddly, 2008. The finding also flies in the face of the confident language of the Market Effects scoping study, which indicated that overall Market Effect would be neatly disaggregated into components – a claim that SCE questioned in its comments on the Market Effects scoping study/workplan.	Studies emerging across the nation (e.g., in WI and MA) have pointed to fairly rapid decreases in NTG over the 2006 to 2008 time period. These decreases were largely due to the rapid growth in the national CFL market during this time period; the growth was especially evident in 2007 (when at least some of it was a result of Wal-Mart's very successful national CFL campaign). The available research suggests that in 2006 programs drove CFL sales, but their influence began to wane in 2007, and this trend continued in 2008. We base our belief that NTG was higher in 2006 and 2007 than in 2008 on these trends.

No.	Author	Subject	Sec / Page	Comment	Response
15.	SCE--Shahana Samiullah	Comparison state analysis logic		The study at various points recognizes the salience of the argument that California IOU ULP programming has had baseline impacts elsewhere in the country. This is essentially lip service, however. If the California program has impacted both Californians' and Pennsylvanians' purchase and usage, the cross-sectional inclusion of Pennsylvania in the estimation of California ME is tantamount to endogeneity bias (whether we are considering the weighted state comparisons or the regression analyses) – in either case, variables representing California's programming are truly correlated with the error in measuring the delta between California and Pennsylvania's true baseline – bias and inconsistency naturally follow.	Please refer to the response to comment #9.
16.	SCE--Shahana Samiullah	Multistate regression	App K	The study finally arrives at a multi-state regression approach, subsuming and in some ways making irrelevant most of the labored comparative work between three "CPUC control states" and California. The omission of price from the purchase, use, and saturation regressions is explained (Appendix K) as a data availability issue, but without a model specification that shows the role of price – better yet the endogenous, intervening role of price as dependent upon program presence and causally prior to purchase/use – it is hard to argue that the "0.23" overall impact conclusion is believable.	We believe the body of evidence tells a consistent story, namely that (p. vii) "California's programs caused market effects in both California and nationally in the past, [but] these effects have largely eroded over the past two years." While we found the California ULPs had a small positive effect on CFL purchases in 2008, and a larger effect on current CFL saturation in California, the evaluation's quantitative analysis did not find evidence of market effects at the end of the 2006-08 program cycle. We agree that it would have been helpful to have attempted to include price or interaction effects between price and program in the models. However, it is problematic to conclude that the inclusion of price would have resulted in a different net effects value. This study and others recently conducted have shown that price is nearly identical between program and non-program areas, after controlling for channel type and program buy-down. We are therefore hesitant to conclude that the inclusion of price would result in a different (higher or lower) NTG, and would likely be so highly correlated with the program variable that it might have to be eliminated from the model (i.e., the program variable is picking up the price impacts).

No.	Author	Subject	Sec / Page	Comment	Response
17.	SCE--Shahana Samiullah	Multistate regression	App K	There is inconsistent consideration of the impact of saturation and its correlate, time duration of using CFLs, both (a) determinants of purchase, and (b) prima facie indicators of "cumulative program activity" that are also cited in the report as evidence of sustained, transformative activity. On one side, the study argues that because of CFL saturation levels in California, transformation has slowed (and/or the sales delta between California purchase rates and less program-intensive states has decreased—another matter entirely). And yet saturation and years using CFLs are positive determinants of purchase (see models 5-4 and 5-5 in Appendix K), indicating that prior CFL saturation in a home slightly but significantly reduces CFL purchase probability. Rather than argue that a certain level of saturation indicates cessation of transformation, it makes considerably more sense to think of saturation as a consequence of ongoing program activity, in a segmented market, which makes some contribution to "sustainability."	We recognize that purchase rates for individual households--and perhaps statewide--will decline when households have converted most sockets (or the sockets they are willing to convert) to CFLs. We have observed a drop in purchase rates somewhere around the 20% to 25% saturation level.
18.	SCE--Shahana Samiullah	Multistate regression	App K	The report portrays the multi-state regression as "supplemental" when in fact it is a major undertaking, which, if not simply cross-sectional, and with price information and more complete California-relevant data, would be a great start toward the multi-equation causal model that is needed to properly understand market changes consequent upon program activity (whether or not one chooses to use terms like "market effects" or "transformation").	The comparison state approach--rather than the multi-state regression--was labeled the primary approach for this study because: 1) one of the three primary objectives of the study was to understand the cumulative effects of the program on the CFL market----in terms of quantities of CFLs sold, but also in terms of other market indicators such as CFL awareness, availability, pricing, etc. While the comparison state approach could examine these other indicators, the multi-state regression could not. 2) the multi-state regression was not an available option at the outset of the study, and 3) data for the multi-state regression was available only for program year 2008, whereas our mandate was to explore market effects for the entire 2006-08 program period.

No.	Author	Subject	Sec / Page	Comment	Response
19.	SCE-- Shahana Samiullah	Pricing model	App J	The development of a hedonic pricing model (Appendix J) moves from a fully "substantive" specification (Model 1) to a model that recognizes "fixed effects" in the form of manufacturer identification (Model 2). The program impact upon price is reduced in Model 2, and "after adding controls for manufacturer, the estimate of the impact of IOU discount on register price per bulb is robust to the inclusion of additional controls (p. J-4). This is quite debatable. Model 6 adds, sensibly, retail channel as an additional control, with clear evident and empirical relevance to register price, and the result is a larger estimated impact upon price. It is not clear why Model 6 is not a candidate discussed for the final estimate – or why a multi-state regression result suggesting a cumulative "net" impact of 0.23 would be credited, when the effect of program upon price, and price upon sales, is not part of the modeling.	In models 1-5, the estimate of the program impact ranges between -3.1 and -2.7, with most models showing impacts between -2.8 and -2.7. The impact of an upstream discount on register price thus appears robust to the inclusion of manufacturer, retail channel, metro area, and month-year variables. Model 5 is the preferred specification because: 1) it includes the widest range of control variables, and 2) the impact of IOU discount on register price is unchanged with the inclusion of these variables. The coefficient on IOU discount in model 5 was obtained by constraining the impact of IOU discount to be the same (i.e., keeping constant) between retail channels: the coefficient represents the average impact of an IOU discount across all retail channels. Model 6 is a generalization of Model 5 in that it allows the impact of IOU discount to vary by retail channel. A sales weighted average of the retail channel impacts in Model 6 would result in an estimate of the program impact equal to the coefficient in Model 5.

No.	Author	Subject	Sec / Page	Comment	Response
20.	SCE--Shahana Samiullah	Aproach to operationalizing the market effects concept		At various points in the study, the authors refer to the market effect of IOU program as if it were simply synonymous with the delta between a comparison state or synthesized comparison state, and California. Setting aside issues like the relationship between California's program history and the sales occurring currently in other states, note that this is not reflective of the theoretical or "conceptual" definition of market effect. The mistake is an outgrowth of the mechanical discussion in the scoping study that was pointed out in SCE comments on the scoping study. This misconception is probably responsible for the late recognition of the need for a comprehensive multivariate approach that recognizes not only multiple influences upon purchase behavior, but variability in "presence of program." See for example the study authors' response to an SCE comment on draft Interim Report, on the need to consider the multiple determinants of CFL purchase behavior: "(T)he report is agnostic as to what may be driving program participation, instead focusing on identifying observable differences in sales between California and the Comparison Area as the means of measuring energy savings due to market effects."	The evaluation recognizes the important role California's CFL programs have historically played in the national CFL market. The report explicitly states (see p. viii), "our analysis was likely affected by the finding that the California IOU programs arguably accelerated CFL sales throughout the U.S....[and that] sales for all states--including the comparison states examined as part of this study--may be overestimated because the baseline sales were affected by California's CFL programs." However, since there is no way to undo California's prior program activity, and since there is no reliable historic data on the effect of CA's prior programs on the rest of the country, we cannot accurately quantify their impact. We conducted the analyses we deemed most appropriate for this evaluation given the study's timing and the identified data limitations.