PY2006-2008 Indirect Impact Evaluation of the Statewide Marketing and Outreach Programs

Volume II of II

Detailed Findings by Program and Data collection Instruments

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1. INTRODUCTION TO VOLUME II

This volume of the report provides detailed chapters on each of the six primary research efforts that supported our Indirect Impact Analysis: the structural equation model (SEM) efforts, pre/post tracking survey with comparison group, verified reach analysis, Asian-language neighborhood based survey, community-based organization observation and intercept survey, and e-Newswire survey. Each of the sections in this volume were designed to provide early feedback on the impacts of the SWM&O efforts. The memos that make up the content of this volume were submitted to the CPUC, IOUs, and the program implementers prior to the development of the integrated report (Volume 1). In addition to the early feedback memos, this volume also includes the data collection instruments used in each research effort and a detailed technical memo explaining our structural equation model.

A. STRUCTURAL EQUATION MODELING

A.1 Detailed Program Findings Memo

MEMORANDUM

TO: CPUC

FROM: Opinion Dynamics Evaluation Team

DATE: June 10, 2009

RE: Structural Equation Modeling (SEM) Effort

Structural Equation Modeling (SEM) is one of the primary methodologies we are using to assist in our impact evaluation of the Flex Your Power (FYP) Program. Specifically, we are using SEM to assess the relative impact of Statewide Marketing and Outreach Program's (SWM&O) efforts in influencing consumers' awareness, intention to act, and adoption of energy efficient measures. To do this, our team modeled both FYP and other influences on consumer attitudes, as well as barriers to energy-efficient purchases as possible intervening variables between messaging and purchase or intent to purchase EE equipment. We chose to look only at the purchase of CFLs because we hypothesized that the drivers of relatively small purchases such as CFLs would be different than those driving large purchases and likely more within the Program's realm of influence.

Our work includes three discrete subtasks:

(1) develop models using relevant literature and program theories to ensure that the appropriate concepts are covered as well as factor analysis to create as parsimonious a survey as possible,

(2) conduct focus groups as a way to ensure that our survey instrument was appropriately crafted to engender the same amount of understanding by potential respondents, and

(3) use an Internet panel survey effort to collect the data for use for SEM.

We had three primary goals for this effort. First, we sought to explain as much variance in purchase *intentions* as possible. We did this to be certain we understand the processes that drive or affect purchase intentions to better understand how FYP messaging may intervene in the process. Second we sought to estimate the effect of FYP on *actual behavior*[1]. Third, we wanted to identify potential levers in the process that could be the focus of future media campaigns. Our primary findings are below.

[1] Throughout this memo we refer to CFL Behavior, which includes three behaviors: Number of CFLs purchased in the past 12 months, number of CFLs installed, and number of CFLs stored.

Summary of Findings

SEM provides the unique opportunity to isolate and measure the FYP Program's effect on a series of factors that contribute to behavior change - in this case the purchase and use of CFLs. We found that the Program had a small, but measurable, effect on CFL purchase intention and behavior, indicating that behavior change through mass media messaging is possible and measurable. This effect, when combined with the effects of other similar messaging, results in a small to medium mass media impact on CFL behavior. However, other variables have a greater impact on purchase decisions including the influence of friends and family and CFL product barriers (e.g. the influence of dislike of CFLs for individuals who are averse to the product). These findings provide insight into potential targets for future marketing and outreach interventions.

In addition, we found that the SWM&O Program's greatest effect centers on impacting awareness levels, namely awareness of the potential consequences of not taking energy saving actions. This finding follows the program theory, which seeks to change behavior through raising awareness around global warming.

- FYP messaging has a small, but statistically significant, total effect on *CFL Behavior* (p=0.07)[2] and *Intention to Purchase CFLs* (p=0. 08). Its effect on Intention is both direct and indirect (i.e., operates through intervening variables) while the FYP influence on CFL Behavior is *only indirect*, and operates through awareness, attitudes, and intention to take action.
- The messages' influence on raising awareness is direct while its influence on attitudes is indirect. Of all variables in the model, the FYP messages have the most impact on consumers' *Awareness of Consequences* of global warming (p=0.13). Its next greatest effects are on the attitudes *Concern about Global Warming* (p=0.12), *Personal Responsibility to take Action* (p=0.11), and *Concern about Energy Efficiency* (p=0.08).
- In terms of total effects, the level of general dislike of CFLs is, by far, the strongest predictor of *Intention to Purchase CFLs* (p=-.73). The negative value indicates an inverse relationship (i.e., the greater the dislike, the less likely does one intend to purchase a CFL).[3] This indicates that focusing on the product itself and consumer perception of the product is an important way to influence intention and behavior. In contrast, attitudes (such as concern for Energy Efficiency and Concern for Global Warming) are low on the list for influencing intention and behavior.

[2] The p-value here is the path model coefficient indicating the strength of the relationship between variables. p-values go from -1.0 to 1.0. The closer to either end of the range, the stronger the relationship. A common metric on which to judge the size of path coefficients is Cohen's standards for judging correlations: Small=.10, Medium=.30, Large=.50.

[3] It is important to note here that this high path coefficient does not indicate that there are a large number of people who dislike CFLs. Rather, it indicates that one's perception of the product, particularly if it is negative, acts as the strongest barrier/driver to CFL purchase behavior.

- FYP messaging and other messaging separately have some of the smallest total effects on intention and behavior of all the variables; however when the two are combined, messaging has a larger total effect on both intention (p= 0.12) and behavior (p=0.15).[4]

We attempted to address the effects of price in our SEM research. To do this, we included a battery of questions to measure price signal, willingness to pay, and one's orientation towards saving money. We excluded the willingness to pay variable as conceptually it was too closely associated with the dependent variables (CFL Purchase Intent and Behavior) to be included as an independent variable. In addition, we found the orientation to savings questions did not add to the model. Thus, the resulting price measurement, price signal, shows a small but stable effect, described in greater detail on page 16.

The results from SEM support the influence of FYP messaging on the program's self-stated goal of affecting awareness (e.g. awareness of consequences) rather than behaviors directly. Additionally, we find that FYP messaging indirectly influenced CFL Behavior, albeit to a very small degree. The results highlight possible directions for future marketing as well as an expected level of effects from this type of social marketing campaign on consumer purchase decisions. In addition, our analysis indicates that other messaging in the marketplace brings about a similar level of effect as the FYP campaign. In our integrated draft report, we will examine these results with the other analytical efforts we are utilizing.

[4] This finding is true for the particular messages tested, which aim to prompt energy efficiency purchase behavior using environmental messaging similar to the SWM&O campaign. However, this additive effect may not occur where under other circumstances or where the messages tester are not aligned, e.g. their either contradiction one another or do not conform to similar themes. Future studies would need to be conducted to better determine which messaging elements contribute to this additive effect.

Methodology and Researchable Issues

Researchable Issues

The overall evaluation had multiple research issues. The SEM effort was specifically designed to address the possible net energy savings of the FYP campaigns (for CFL purchases)[5] as well as the influence of the program on the intention to act.

We designed the SEM model with four goals in mind:

1. To estimate the strength of the influence of program messaging,
2. To understand the place of program messaging in consumers' decisions to purchase energy-efficient lighting,
3. To assure ourselves that we understand the decision process well enough to have confidence in our estimates of program influence and how the influence works, and
4. To identify potential points of influence.

Focus Groups

The focus group sessions were designed with four objectives in mind: (1) to address measure-specific barriers and drivers for two technologies, CFLs and HVAC[6]; (2) to assess sentiments and language used to discuss global warming, sense of immediacy for conserving energy and global warming, and the sense that personal actions will make a difference; (3) to make an initial assessment of recall and reaction to Flex Your Power and other energy efficiency-related advertisements; and (4) to test survey questions as to understandability and how well they appear to capture participant sentiments.

We independently recruited 8-10 participants for each of six focus groups. Four of these groups (two each) were held in two primary MSAs:[7] The San Francisco Bay Area (Oakland, CA) and the Greater Los Angeles Area (Irvine, CA). The remaining two were rural focus groups held in Jackson, CA. The groups were held in the evenings during the first two weeks of February 2008: Jackson (February 4), Oakland (February 7), and Irvine (February 12). The six focus groups were recruited by zip code to meet certain criteria on demographic characteristics, household energy profiles, and purchasing patterns. A series of twelve common themes emerged across all six focus groups. Our memo of 3/10/08 outlines these findings.

The focus group explored the following constructs in our model: (1) product related barriers; (2) orientation to saving money; (3) concern regarding energy efficiency; (4) concern regarding global warming; (5) belief that energy efficiency is a movement (many people acting); and (6) sense of immediacy. Results of the focus group brought about changes to the wording in our survey.

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[5] Actual energy savings associated with FYP will be addressed in the indirect impact report.

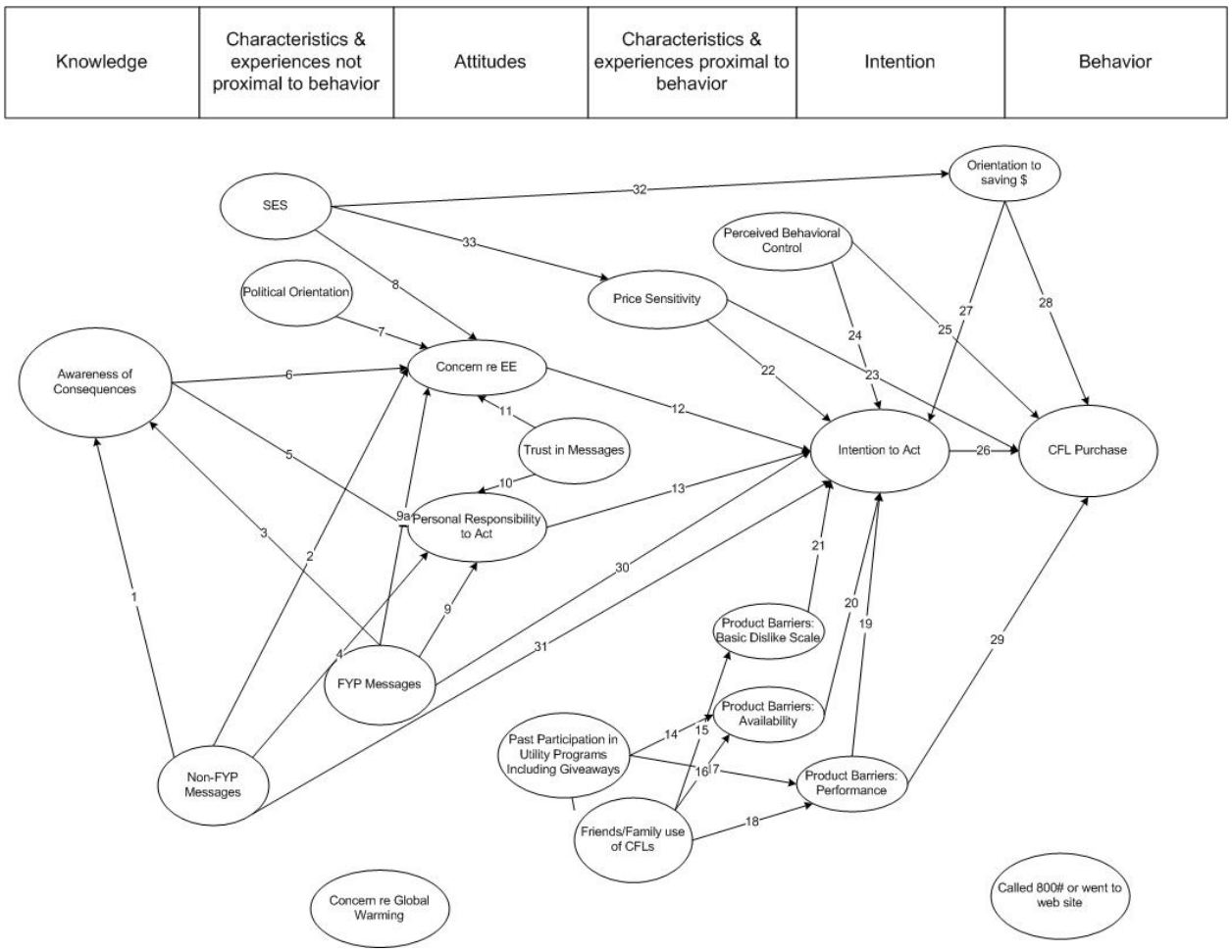
[6] HVAC as a technology for SEM was subsequently dropped from our plan.

[7] Participants were also required to have been able to identify service providers (e.g., for Internet) and participate in the decision making of purchases of major appliances. Focus group screeners for each group are provided in Appendix I.

Survey Design

The focus groups were not the beginning of the survey design, but were an important component in a long process. We began the process by reviewing literature regarding attitudes, behaviors, and how they link together in the domain of "green" behaviors. We also created hypotheses that the SEM survey was designed to test. This helped us create our original set of constructs. Where possible, we used other literature to help us understand constructs that were found to predict similar types of attitudes and behavior and to design specific question wording around the constructs. This led to our first path model shown in Figure 1.

Figure 1. Original CFL Path Model



Using this model as our guide, the original survey design consisted of 149 questions across 17 different areas. This obviously was too long. A critical review by the team helped us to pare down the questions to approximately 80 questions before our first pre-test.

We performed two pre-tests of 100 completed interviews each to assure that the survey was correctly written and as frugal as possible with our questions. The first pre-test took place in August 2008. We used the results of the pre-test to test the ability of the constructs to "hang

together" as a single construct through obtaining the Cronbach's alpha[8] of each group. We removed questions from some constructs because of this analysis. Additionally, we performed a factor analysis of the multiple constructs to determine any overlap. We removed six constructs based on this analysis. The second pre-test was fielded in September 2008 to test the changes made previously. The constructs that remained in the survey are provided in Attachment 2. In addition, we separated survey questions meant to measure the same construct so they would not appear together in the questionnaire. The idea of this was to minimize artifactual correlations among questions due simply to proximity on the questionnaire.

The full fielding of the survey was performed in November 2008 with 1100 completed interviews. We provide a copy of the final survey in Attachment 3.

Sampling

We developed the sample design by taking several issues into account. To enhance the validity and reliability of our measurement of program awareness (which underpins the relationship between the program and actions taken), the SEM survey effort requires visual advertisement prompts. Thus, a random digit dial (RDD) telephone survey was not a viable option. In our evaluation plan, the Opinion Dynamics team indicated that the SEM questionnaires would be fielded using online panels. To determine the most appropriate field method, we explored alternative field methods that we thought might generate a more randomized sampling approach to produce a more representative sample.

To determine the most appropriate field method and sample design for the SEM survey effort, we considered two key factors:

1. Cost per complete
2. Distribution of key demographics for each sampling approach

We explored two alternative methods to online panels:

1. Using random digit dialing (RDD) to recruit participants to an online survey and/or mail survey. Once participants agreed to participate, they would receive a mail-in form or link to an online survey and a five dollar incentive for participating. The estimated fixed costs for fielding this effort were approximately 3 times the cost of the river sample method described below.
2. Using an online river sample[9] and setting quotas to mirror the two 2006 census demographics that we had controlled for in the tracking survey: Age and Homeownership. A river sample is an online intercept survey, where participants are solicited from thousands of websites in the AOL-Time Warner media conglomerate to take a survey on frequently viewed websites. These include but are not limited to the following sites: CNN.com, Time.com, PopularScience.com, Parenting.com, AOL, and

[8] Cronbach's alpha is a statistical test that measures the internal reliability or consistency of a number of items within a scale or index. The value ranges from 0 to 1.0 with values towards the higher end (above 0.70) suggesting that the items are measuring the same thing.

[9] River sampling recruits using banner ads, pop-up ads and similar instant "capture" promotions. Individuals who volunteer to participate are screened for their reported demographic characteristics. Hence the metaphor of being captured from the flowing river of online persons.

Netscape. Participants are then screened for a number of potential survey efforts and routed to a given survey based on their eligibility. This differs from the internet panel approach because it randomly solicits a wide range of potential participants, rather than drawing from a pool of pre-selected individuals.

To assess the potential differences between the RDD sample approach and online methods, the ODC team determined if there were marked differences in the demographic distributions between our online panel participants (SEM pretests) and RDD survey participants (Tracking survey).[10] We compared the demographic distributions between the tracking RDD sample and the SEM online panel on three items closely correlated with homeownership. Note that we did not test homeownership directly because this question was not included in the SEM pretest.

Overall, the online sample had the most representative distribution on age and income compared to the 2006 census. Notably, the age weights for the online sample ranged from 0.75 to 1.18, while the age weights for the RDD group were much higher. Our team conducted a chi-square test to see whether there was a statistically significant association between the type of survey (online or RDD) and income and education. We found the following:

1. The RDD sample was shown to skew higher income[11]
2. The online sample was shown to skew more educated[12]

While there appeared to be a bias in each method, the ODC team felt that the potential impact of these biases on the survey results were comparable. In our tracking survey, we found that education and income were moderately associated (a Cramer's V of 0.21, where a value of zero indicates no relationship and a value a one or negative one indicates a perfect relationship), thus we hypothesize that the difference of the potential bias imposed based on income and education is negligible.

Therefore, looking at cost, key demographics, and recall validity, the river sample was the most appropriate method for the SEM survey. To ensure that the sample was representative of the state, the ODC team mirrored the tracking survey and imposed quotas on homeownership. Once fielding was complete, we calculated weights to compensate for differences in the age distribution of the sample compared to the population. Ultimately the weights were not used in the SEM analysis because a comparison of the correlation matrixes with and without the weights showed no difference. Thus, the simplifying measure of leaving the sample unweighted was taken in this already complex analysis.

[10] We recognize that there are differences between the river and panel sampling approaches, but feel that the panel sample serves as an adequate proxy for biases inherent in online sampling approaches.

[11] There was a statistically significant association between the type of survey (online or RDD) and income, with the $\chi 2$ (7) = 17.6, p=0.01. The percentages indicate that the telephone sample tended to have higher income levels.

[12] There was a statistically significant association between the type of survey (online or RDD) and education, with the $\chi 2$ (5) = 37.3, p<0.001. The percentages indicate that the online sample tended to have higher education levels.

Brief Description of the Model

SEM is a statistical technique that is used to model and test causal relationships between variables. SEM allows inclusion of multiple factors that are related to one another and that can be teased out when explaining a behavior. In our case, we use SEM to examine customers' motivations for their energy efficient behavior, specifically with respect to intention to purchase and actual CFL behavior. We use SEM to see where and how FYP messaging affects this, separating out its effect from many other influences. SEM has several advantages over more commonly used regression techniques: it allows the influence of variables to be both direct and indirect; assesses measurement error and removes it from the structural relations being modeled, and allows predictors to be inter-correlated.

The SEM approach begins with constructing a hypothesized model involving causal relationships and subsequently testing the model with data. As indicated previously, the model was developed based on current theory and research on attitudes and behavior in the area of "green" behavior, or behavior that involves an altruistic component.[13]

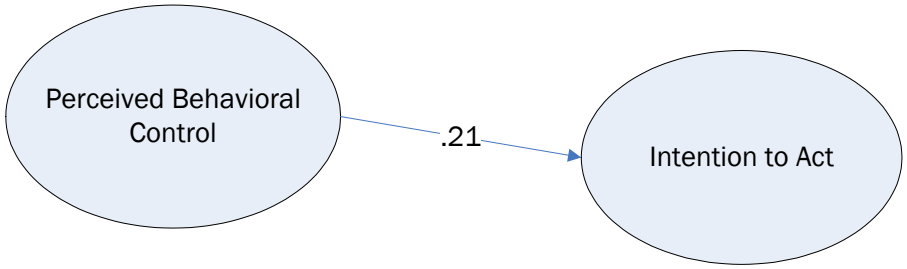
In an SEM model, the effects of one variable on another can be broken down into direct, indirect, and total effects. These effects have meanings similar to path coefficients or standardized regression coefficients. That is, they can vary between -1.00 and +1.00, representing stronger relations as they move toward the ends of that range. Throughout this memo, we discuss only statistically significant path coefficients. While many coefficients may seem small (e.g. 0.18), they are statistically significant and thus represent a stable and measurable effect. Certain relationships represent greater effects than others. The table below provides a context for the effect sizes you will see throughout the memo.

Table 1. Path Coefficient Range of Effects

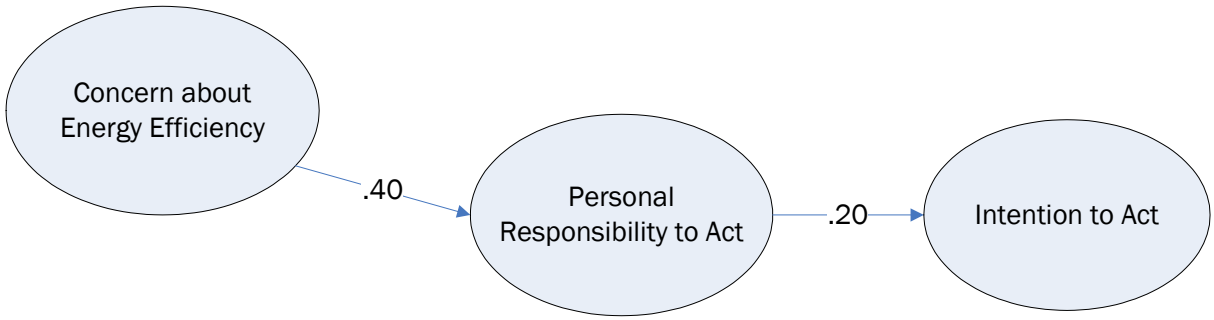
Effect Size	Range of Path Coefficients
Large	.50 or more
Medium	.30
Small	.10 or less

A variable is said to have a *direct effect* on another variable if it influences that variable directly. In SEM, a directed line connecting one variable to the other indicates that the first variable is having a direct effect on the second variable. In the below diagram, Perceived Behavioral Control has a direct effect of 0.21 on Intention to Act.

[13] Bamberg & Schmidt, 2003; Barr, 2007; Black, Stern & Elworth, 1985; Corraliza & Berenguer, 2000; Davies, Foxall, & Pallister, 2002; DeGroot & Steg, 2008; Diekmann & Preisendorfer, 2003; Dietz, Dan, & Shwom 2007; Dietz, Fitzgerald, & Shwom 2005; Fishbein and Ajzen 1975; Kaiser, Ranney, Hartig, & Bowler, 1999; Lavidge & Steiner 1961; Lee & Holden, 1999; Norlund & Garvill, 2002; Oom do Valle, Reis, & Menezes, 2005; Schwartz, 2007; Soonthonsmai, 2001; Stern, Dietz & Kalof, 1993; Stern, Dietz, & Guagnano, 1995; Tarrant & Cordell, 1997; Thogersen, 2002; Wall, Devine-Wright, & Mill, 2007; Weigel & Weigel, 1978.



A variable has an indirect effect on another variable if it does not directly influence the other variable, but does influence it working through intervening variables. No directed line connects that variable to the variable it has an indirect effect on; however, it can reach the variable through following the paths in the model.[14] The value of the indirect effect is determined by multiplying the direct effect by its successor effects going from the path leading from that variable to the other. In the below diagram, Concern about Energy Efficiency has a direct effect of 0.40 on Personal Responsibility to Act and an indirect effect of 0.08 (0.4 * 0.2) on Intention to Act.



In addition, variables may have both a direct and an indirect effect. Finally, the *total effect* of one variable on another is the *sum* of all its direct and indirect effects.

In any modeling effort, the statistical significance criterion can be set to whatever value the researcher feels is most appropriate, within the context of convention. For this model, because of the desire for a very rigorous statistical result, the significance level was set at 0.05. This means that there is only a 5% chance that we are incorrectly concluding that variables are related when they are not. We felt that this was more appropriate for this work effort than the typical 0.10 significance level accepted in our field.

The final SEM model with the best fit is shown in Figure 2. The model has two ultimate dependent variables: CFL Purchase Behavior and Intention to Act.[15] The model centers on awareness and attitudes around the dependent variables, with the remaining variables being characteristics and experiences that can impinge on these. All of the numbers shown Figure 2 represent *direct effects*. These numbers can also be called "path coefficients" and we reference them using a "p" in the results section of this memo. Larger absolute values indicate stronger relationships. Like standardized regression coefficients, path coefficients

[14] Schumacker & Lomax, 1996.

[15] Actually, all variables with an arrow pointing toward them are, strictly speaking, endogenous or dependent variables. We mean here that the focus of attention in prediction is on the ultimate variables in the causal chains of intention and behavior.

are adjusted for all other paths in the model, and thus represent unique relations. All of the path coefficients shown in Figure 2 are statistically significant except for the direct path from FYP to CFL Behavior.[16] This path was left in the model because it is part of a *total* program effect that is significant (direct and indirect effects).

This model uses three items to measure the dependent variable, CFL Behavior (purchase, installation and storage). Another model was created to estimate energy savings from CFL purchases, which was represented by the CFL purchase item only. The fit of this second model is similar, but not quite as good. As such, we chose the model shown in Figure 2 as our final model to discuss within this memo.[17] Our estimates of CFL purchases through the second model will be provided in the final indirect impact report.

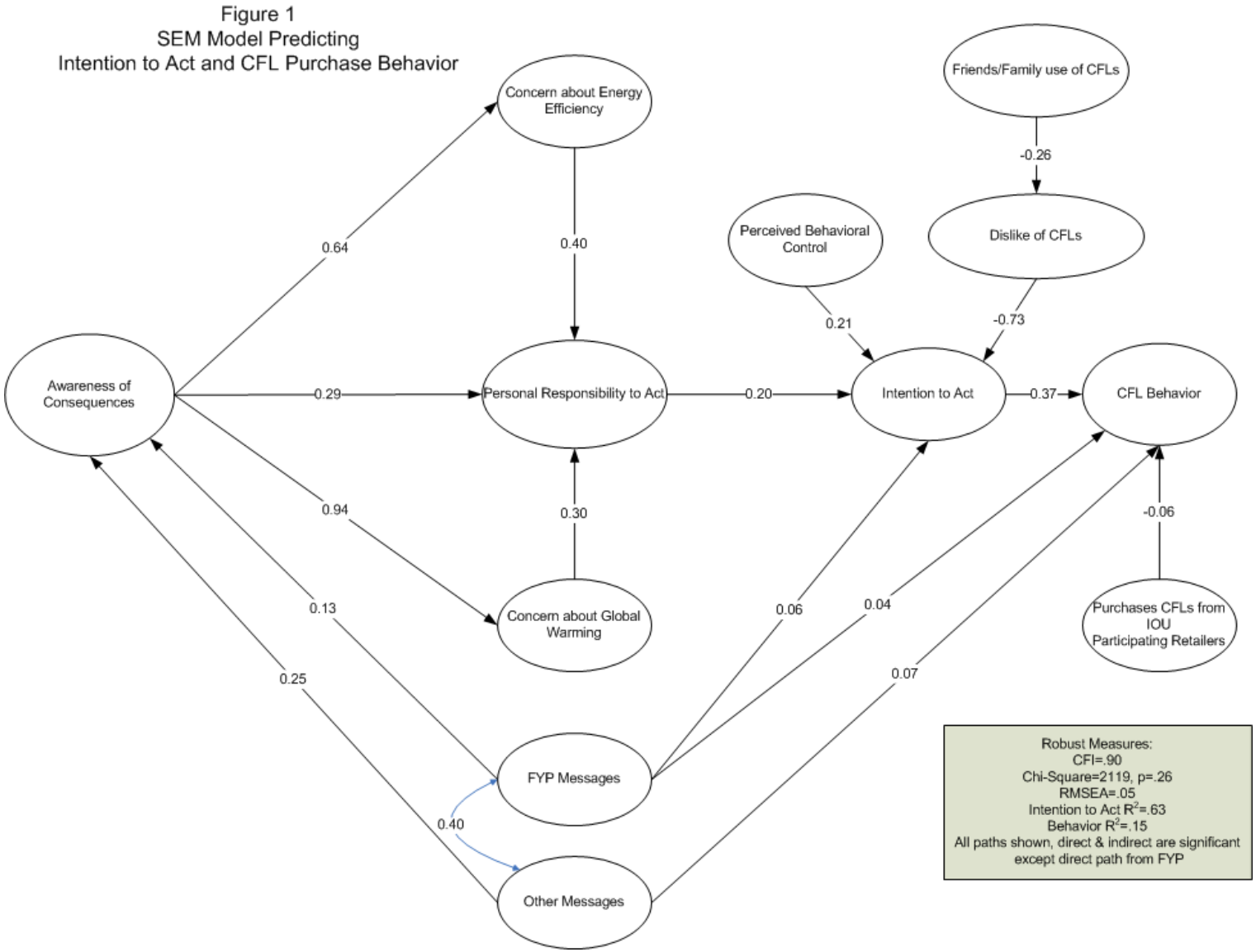
Going from left to right, the model reflects the theory that Awareness of Consequences is the beginning of the internal process that eventually leads to the Intention to purchase CFLs. Awareness of Consequences first affects the attitudes Concern about Global Warming, Concern about Energy Efficiency, and Personal Responsibility for taking Action. These attitude concepts then predict Intention to Act and Intention to Act then predicts actual Behavior. External events and processes (in the diagram these are FYP messaging and Other messages) can influence this chain of internal developments.

Our initial hypothesized model included a number of independent variables not included in the final model. These constructs are: Price Sensitivity, Performance, Trust in Energy Efficiency Information & Claims, Orientation towards Saving Money, Participation in IOU Programs, Education, Income, Age, and Ethnicity. Constructs not used in the model were dropped because they didn't add to variance explained in the model overall or to the fit of the model. Thus the absence of these constructs in the model should not be considered a lack of association with CFL behavior, but rather that they do not add to the model beyond what is in it already.

[16] In the above model, all of the paths above 0.04 were found to be statistically significant. Note that it is not a general rule that paths above 0.04 are statistically significant – it is determined by comparing the path size to its standard error.

[17] The differences between the two models do not change the general result of a small, but significant effect from FYP.

Figure 2. SEM Model Predicting Intention to Act and CFL Behavior



Results

Before presenting the detailed results of the analysis, we consider the overall success of the model. This is referred to as "fit" and represents how well the hypothesized model fits our resulting data.[18] We examined three measures of fit as each provides a slightly different perspective on the fit of the model.[19] These three measures indicate the model is providing an excellent fit to the data (Comparative Fit Index (CFI) = 0.90[20], Chi-square goodness-of-fit probability = 0.26[21], Root Mean Square Error of Approximation (RMSEA) = 0.05[22].

The R^2, or the variance explained by the model, indicates how well the model explains the variance in the dependent variable. The higher the R^2, the better able the model is to explain the dependent variable. For Intention to Act, the primary dependent variable of interest, the variance explained was 63%. We translate this variance into the more commonly used and more general effect size (f^2).[23] The 63% translates to an effect size of 1.7, a very large effect size;[24] indicating that the variables with direct effects on the dependent variables are explaining a substantial level of variance in the dependent variable. The variance explained in actual Behavior was 15%. This translates to an f^2 of 0.18, which is larger than what is considered to be a medium effect size (0.15). [25]

Table 2 displays the variance explained and effect sizes for the two dependent variables.

Table 2. SEM Model Effect Size

Statistical Variable	Description	Intention to Act	CFL Behavior
R^2	Variance Explained by the Model	63%	15%
f^2	Effect size	1.7 (very high)	0.18 (medium)

[18] In technical terms, the "fit" indicates how well the hypothesized model covariance matrix (a covariance matrix is an unstandardized correlation matrix) corresponds to the observed covariance matrix of all variables with all other variables in the model.

[19] Because the variables were not all normally distributed, it was necessary to use robust measures of fit and statistical tests of significance (Byrne, B., Baron, P., & Campbell, T., 1994).

[20] A value at or above 0.90 is considered a good fit.

[21] This Chi-square value, a measure of the difference between the observed and hypothesized covariance matrix, is not statistically significant. Combined with the large sample size (the Chi-square value tends to be significant for large sample sizes), this indicates that the observed and hypothesized covariance matrices are very similar.

[22] The RMSEA is a measure of the average difference in the correlations between observed and hypothesized matrices, after adjusting for the size of the correlations. Although what is considered a bad and a good RMSEA varies by author, a common interpretation is that at or below 0.15 is adequate and at or below 0.08 is good.

[23] The f^2 is defined as the explained variance divided by the unexplained variance. For example, for an R^2 of 63%, the f^2 is calculated as: 0.63/0.37 = 1.7.

[24] According to Cohen, 1988 a standard large effect size (in f^2 terms) is considered to be 0.35.

[25] Cohen, 1988.

The following sections contain the results of the SEM analysis. We start with the influence of exposure to FYP messaging on consumers' CFL Behavior and compare this to the effects of other mass media messaging.

Mass Media Messaging Effects on CFL Behavior

FYP The total effect of FYP messaging on CFL Behavior, at 0.07, is small but statistically significant. Exposure to FYP does not produce a significant path to CFL Behavior[26] but it does impact it indirectly (indirect p=0.03) through its effect on Intention to Act and through the Attitude chain. The direct path does, however, contribute to the total effect of 0.07[27].

Other Messaging In addition to examining the effect of FYP, we examined the effect of exposure to similar messaging. This included awareness of utility programs (not participation), utility messaging, and media programming.

The total effect of Other Messages on CFL Purchase Behavior, at 0.08, is small but statistically significant.[28] Exposure to Other Messages works on CFL Behavior directly (p=0.07) and indirectly (indirect p=0. 02).

FYP Effects on CFL Purchase Intent

Intention to Act Intention to Act was measured by the respondents' stated likelihood of purchasing CFLs in the future, asked in three ways: no doubt that the respondent would purchase CFLs in the future, the next replacement would be with a CFL, and the percent of future purchases that would be CFLs.

FYP Exposure to FYP messaging has a direct and statistically significant impact on Intention to Act (p=0.06) and an indirect impact through attitudes (indirect p=0.02). The total effect, of 0.08, is small but statistically significant.

Other Messaging[29] Other Messages have an indirect effect (indirect p=0.04) on Intention to Act through attitudes but, unlike the FYP messaging, no direct effect on CFL Purchase Intention.

FYP Effects on Other Model Variables

Table 3 shows the effects of exposure to FYP messaging on all the other variables in the model. In other words, when there is either a direct or indirect effect of FYP on another variable, it is shown in the table. This also allows for the effects of FYP on Intention and CFL

[26] The p is 0.04 and is not statistically significant.

[27] The total effect, composed of direct and indirect effects has its own standard error. In this case, the total effect coefficient increased more than the standard error did by adding the direct path. Thus, it is possible for the non-significant direct path to be part of a significant total effect.

[28] Due to rounding error, the direct and indirect effects do not add up to 0.08.

[29] It may be of interest that Exposure to FYP and Other Messages are strongly correlated. The correlation is 0.40, which means that 16% of the variance is shared between the variables. This means that respondents exposed to one type of messaging are more likely to have been exposed to the other type.

Behavior discussed earlier to be compared to its effects on awareness and attitudes. In the table, the variables are shown in rank order of the strength of the effect that FYP has on that variable.

Table 3. Direct and Indirect Effects of FYP on Other Variables in the Model (Path-Coefficients)

Rank	Construct	Type of Construct	Direct Effect of FYP	Indirect Effect of FYP
1	Awareness of Consequences	Awareness	0.13	NA
2	Concern for Global Warming	Attitude	NA	0.12
3	Personal Responsibility to take Action	Attitude	NA	0.11
4	Concern for Energy Efficiency	Attitude	NA	0.08
5	Intention to Act	Intention	0.06	0.02
6	CFL Purchase Behavior	Behavior	0.04	0.03
7	Product Barriers	Influencer	NA	NA
8	Friends and Family	Influencer	NA	NA

As the ranking in the table makes clear, the direct and indirect effects of FYP on awareness and attitudes are larger than the direct and indirect influences of FYP on Intention to Act and CFL Behavior. As is usual in attitude-behavior research, there are imperfect relationships among attitudes, intentions, and behavior.

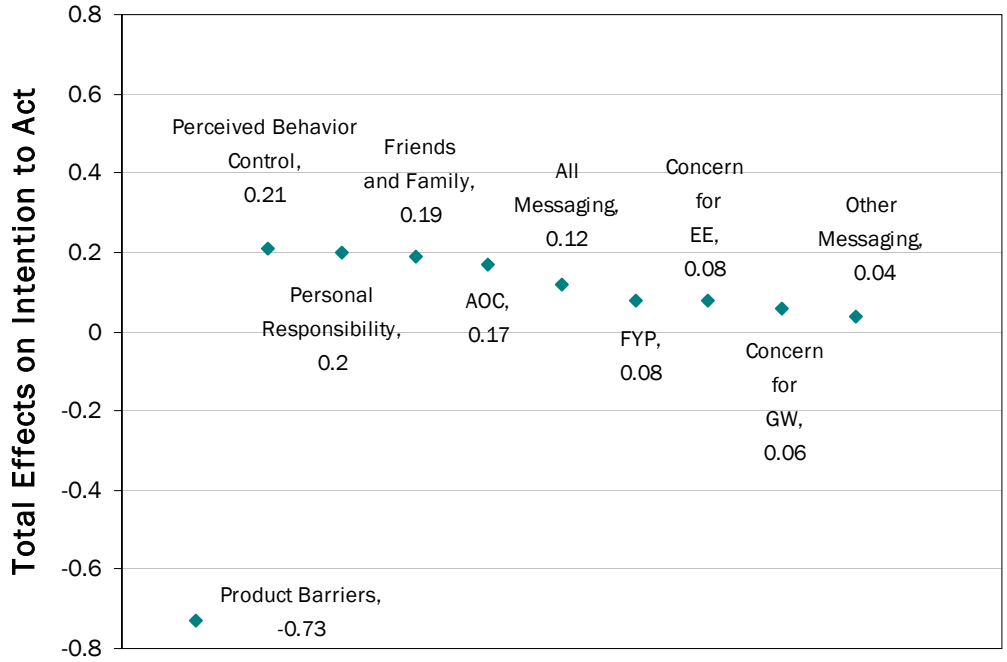
The variable that exposure to FYP most strongly predicts is Awareness of Consequences. It has a direct path of 0.13. The FYP messaging has its impact on the attitude factors through their impact on Awareness of Consequences rather than directly on the "concern" factors.

We can see that the most powerful effects of the FYP messaging have been on: 1) awareness of the consequences of using energy inefficiently; 2) concern about global warming, and 3) consumers' sense of personal responsibility to take action. This finding is not surprising, given that these themes correspond to the content of the FYP messages for this program cycle. In other words, the ads and programming provided powerful messages about the consequences of global warming and how that can be affected by reducing energy usage. Thus, the primary path of influence would be through influencing attitudes.

Strongest Predictors of Behavioral Intention and Action

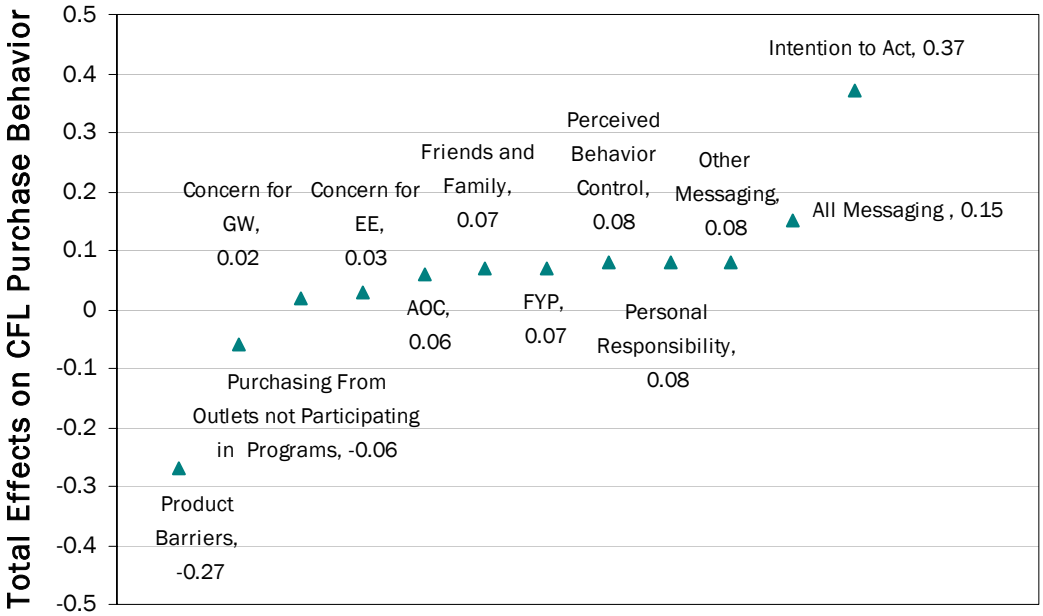
In this section we examine the effects of variables other than FYP on Intention to Purchase CFLs and Behavior, in respect to total effects. Figures 3 and 4 displays the *total effect* of each variable in the model on Intention and Behavior. The predictors are plotted from -1 to 1, to indicate the relative influence of each variable on the dependent variables.

Figure 3. Total Effects of Model Variables on Intention to Act



As evident when Figures 3 and 4, the total effect sizes of each construct on CFL intention is greater than those of CFL behavior. This is a likely difference, indicating that it is easier to influence one's intent than one's actual behavior.

Figure 4. Total Effects of Model Variables on CFL Behavior



Before examining the predictors with the largest impact on Intention and Behavior, we note that the predictors with the lowest impact include the messaging variables individually (i.e. FYP Messaging and Other Messaging), Concern for Energy Efficiency, Concern for Global Warming, and where the respondent purchases light bulbs. Their total effect size ranges from 0.04 to 0.08 in predicting Intention, and from (-).06 to .08 in predicting Behavior.

Product Barriers It is clear that the strongest predictor of Intention is the level of general dislike of CFLs[30] with a path coefficient of -0.73. This is, by far, the variable with the largest effect on Intention to Purchase CFLs. This means that the more the consumer finds fault with CFLs, the less likely s/he is to purchase them. Although this seems obvious, this aspect of the model provides a promising target for influencing consumers: addressing the reasons that they dislike this product. Influence efforts could also focus on the product itself and the consumers' perception of it.

Perceived Behavior Control The concept of Perceived Behavioral Control was an important one from the literature predicting "green" and conservation behaviors of any sort. Perceived Behavioral Control captures the idea that a consumer may not feel they have complete control, or any control, over household purchases of lighting. This can work through others in the household objecting to CFLs or the respondent may simply not be the purchaser of light bulbs for the household and would therefore not form the intention to act, regardless of their opinions or attitudes. It is a moderate predictor of Intention to Act (p=0.21) in this study.

Personal Responsibility to Act Another notable concept is Personal Responsibility to Act – a person can believe that a problem exists but not feel personally responsible for trying to solve it. We find that this concept is related to Intention to Act and to Behavior (p=0.20 and 0.08, respectively). Based on these results, this can be a way to influence consumer behavior where the behavior has an altruistic component.

Friends and Family Friends and Family Use of CFLs and the consumer's awareness of it, is also related to Intention and Behavior (p=0.19 and 0.07, respectively) at a level similar to personal responsibility. The social network of a consumer can impact their purchase behavior. The Friends/Family Use of CFLs variable moderately and negatively affects the Basic Dislike product barrier (-0.26). Consumers with friends and family who use CFLs tend to score lower on the Basic Dislike product barrier scale, and are therefore more likely to form the Intention to Act.

Awareness of Consequences Also at a similar level, but slightly weaker, Awareness of Consequences is a predictor of intention and behavior (p=0.17 and 0.06, respectively).

Price We attempted to incorporate price effects in this study using three variables: where the consumer purchases light bulbs, a general measure of price sensitivity and a measure of how much the respondent was willing to pay for CFLs. The variable for where the consumer

[30] This is the only product barrier that emerged as a predictor in this study.

purchases light bulbs had a direct effect on purchase behavior.[31] The effect is small but statistically significant and negative (p=-0.06). This is a binary variable (1,0) that is scored 1 if the consumer purchases light bulbs at a type of store that most likely did not participate in the IOU upstream lighting programs, such as a drug store or super market. A zero represents those who purchase light bulbs in the type of store that was more likely to have participated in a buy-down program, such as big box stores or home improvement chains. The variable is meant to account at least partially for the price effect of those programs: the upstream lighting program participant stores would generally sell CFLs at a lower price than the non-participant stores. However, there may be other explanations for why this variable is significant. Possible reasons for the small effect might include the fact that prices are now quite low in general for CFLs, so price differences may not be big drivers of the decision. Another reason could be that there is a clear emotional component to the decision to do one's part for the environment that could sometimes override the usual price effects.

Neither of the other two price variables significantly predicted Purchase Behavior. The general measure of price sensitivity is likely too general to predict a specific purchase, such as light bubs; however, this does not explain why the variable about how much the respondent was willing to pay for CFLs was not significant.

All Messaging Combined Although FYP and other messaging have individual effects, they are related, and we also analyze their combined effects on Intention and Behavior. This is an indication of the potential all messaging has on influencing consumers. The total effect of All Messaging Combined on Intention to Act is 0.12 and on Behavior is 0.15.

Overall Predictors of Actual Behavior The two strongest predictors of Behavior in the model are: the Basic Dislike product barrier (which predicts it at a moderate level, p=-0.27) and Intention to Act, which also has a moderate relation with Behavior (p=0. 37). General dislike of CFLs, as was the cased with intention to act, has the greatest effect on Behavior indicating that product aversion is the strongest inhibitor to energy efficiency behavior in this model. In addition, the moderate relationship between intention to action and Behavior indicates two things: (1) the theory of planned behavior is supported by indicating that intention is a moderate precursor to action, however; (2) not all intention results in action, e.g. the relationship is imperfect and should and intention should not be presumed to *verify* that behavior change has and/or will occur.

Effect Sizes and Other Studies

The effect size of the FYP as estimated by the SEM model is small. However, it is important to put this number in context. There are many studies in marketing and communication literature that assess the impact of mass media campaigns on behavior change. To add context to our figures, we reviewed a series of studies covering mass media campaigns including product advertising, campaigns on social issues, and health issues. In particular, we focused on meta-analytic reviews of mass media campaign effects on behavioral

[31] Other than Intention to Purchase and Other Messaging, this was the only predictor with a direct effect on Purchase Behavior.

outcomes.[32] Through this literature review, we found that mass media campaigns can yield small effect sizes when predicting a behavioral outcome.[33] In this review, it was common to find small effect sizes between 0.01 and 0.15 for mass media. While none of the campaigns reviewed are exactly like the FYP program, we found that the range of what was covered is wide enough, and the small effect sizes common enough that it is clear that the small effect seen here is consistent with other studies. It is important to note that effect sizes can also be larger, with many factors affecting the size of the impact: type of target behavior, whether there are physical or social consequences, whether emotions are involved, frequency of purchase, message strength, framing of the message, the use of fear, and many others. While we found that effect sizes for mass media campaigns on behavior are often small, there is an indication that each campaign's approach, behavioral target, and objectives have a great impact on their effect sizes (i.e., their ability to produce behavior change).

Caveats

Our memo on this complex modeling approach would be incomplete without some acknowledged caveats.

- We often call this SEM process "causal modeling" because we are thinking in terms of various factors "causing" attitudes and intentions and behavior. However, this does not mean that we have demonstrated that any factor has caused another or even influenced it. Causality has historically been demonstrated by experimental or quasi-experimental designs, which aren't possible at this stage in the acceptance curve of CFLs in California. However, this evaluation team, as well as other evaluators (Mohr, 1995; Chen, 1990), have concluded that this method provides credible causal evidence.
- The policy maker must consider the fact that the FYP program and others that have similar aims have been in force for years, so we can't expect the increment of FYP effects to be large for this one year. In the early stages of acceptance of a technology such as CFLs, we would include a number of knowledge and awareness constructs in predicting intention to purchase, and we would expect FYP to impact them. However, the California population is beyond that stage now. Some of the effect of the early FYP programs will have contributed to a baseline acceptance that this program year and this study have built upon. Thus, it is impossible to capture the entire effect of FYP using any statistical method, including this one without beginning to collect data in the early stages (which was not done) and modeling the change over time. Excellent point!
- One can make the argument that concern with the environment or with global warming or with energy efficiency might cause the customer to become aware of the consequences of not conserving energy rather than the other way around as it is

[32] We chose not to focus on studies examining mass media effects on attitudes which generally yielded larger effect sizes than those studies that focused on behaviors (as our findings indicate).

[33] Andrews & Franke, 1991; Assmus & Lehmann, 1984; Benoit, Leshner, & Sumana, 2007; Dillard, Weber, & Vail, 2007; Keller & Lehmann, 2008; Latimer, 2007; Lodish, Abraham, Kalmenson, Livelsberger, Lubetkin, Richardson, & Stevens, 1995; O'Keefe, & Jensen, 2007; Snyder, Hamilton, Mitchell, Kiwanuka-Tondo, Fleming-Milici, & Proctor, 2004; Tangari, Burton, Andrews, & Netemeyer, 2007.

portrayed in the model. There is likely some truth in this argument, but it is probably not worth trying to model both causal directions at this stage. Knowledge generally and logically precedes attitudes (reference – Fishbein and others?) about the target of the attitude; that is why it is modeled in this way. However, there probably is reverse causality present in some degree on a number of model paths. If SEM is used in the future, instrumental variables could be included. These are variables that are not necessarily relevant theoretically, but can help determine causal directions.

- Connected with the previous point, one of the challenges of this study has been that such a large number/percentage of California residents are already "sold" on the idea of CFLs. This makes the distribution of the answers to many of our survey questions highly skewed; i.e., sometimes as many as 60% of the respondents chose the most extreme response category to attitude and behavior questions. This is both difficult methodologically and substantively, as noted above, as so much of the change in acceptance has already happened. This problem, as a methodological issue was dealt with by employing the SEM software's "robust" estimating methods, which affect the standard errors of the path coefficients, thus providing a very conservative test of statistical significance. Variable transformation approaches were not effective in dealing with the skewed distributions. The problem was also recognized at an early stage of pre-testing and led to rewording questions to reduce the skew by making it more difficult to choose answers at the top end of attitude scales.
- To conclude that the relatively small net effects of FYP on CFLs purchases are unimportant is premature. This issue should be addressed in the final report.

NEXT STEPS

For the final indirect impacts report, Opinion Dynamics will conduct the following tasks:

- Develop energy-saving estimates to address the lifecycle energy and demand indirect impacts
- Integrate our findings with other SWM&O analysis to generate a comprehensive picture of the potential of marketing and outreach to affect behavior change

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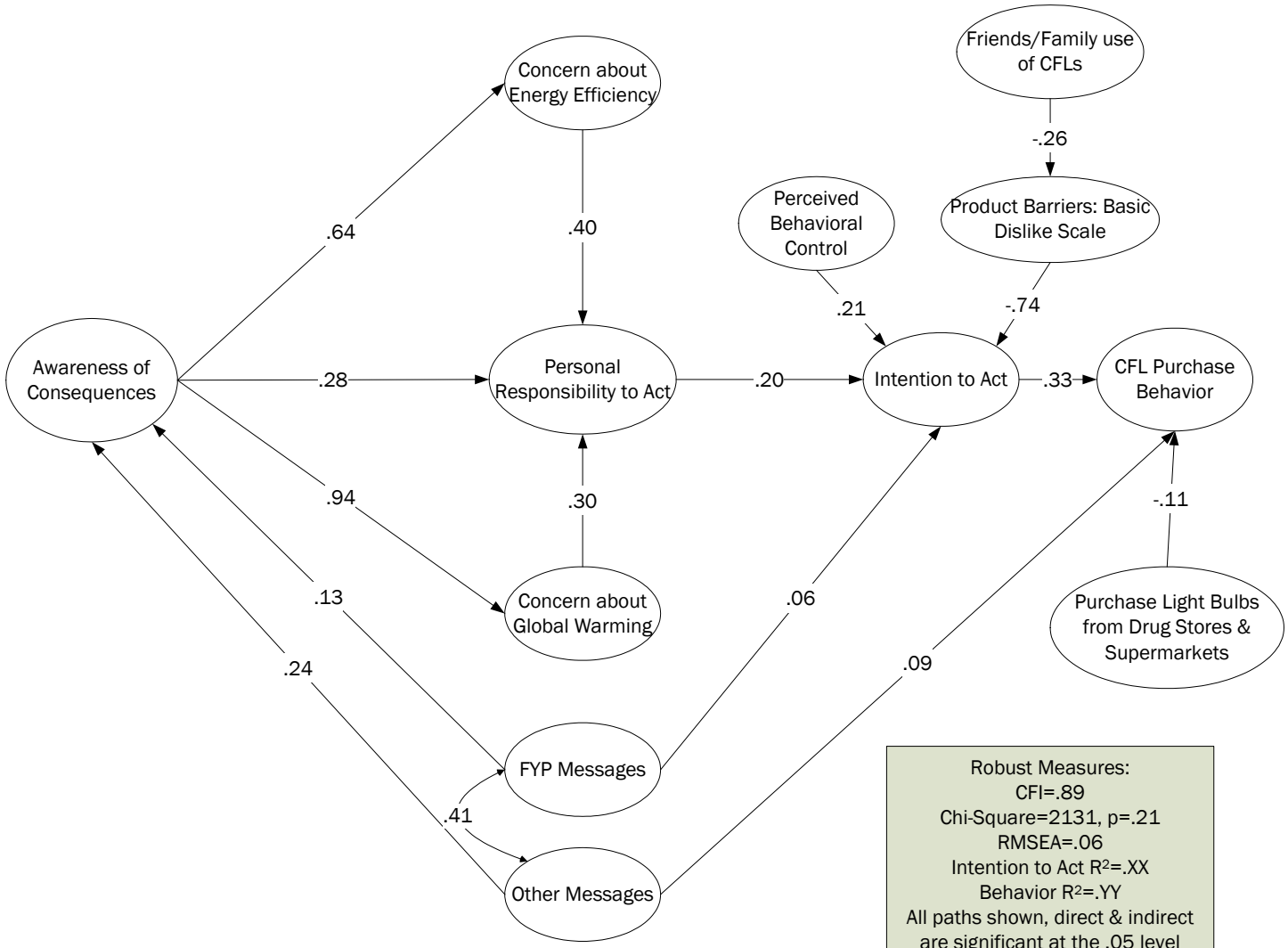
ATTACHMENT 1 – SEM MODEL RESULTS WITH BEHAVIORAL CONCEPT USING A SINGLE ITEM

In order to use the SEM to estimate potential energy impacts that could be caused by FYP, the dependent variable of purchase behavior had to be reduced to a single item. This causes some slight changes in the model – most notably the removal of the direct path between FYP and purchase behavior even as an indirect route. The overall results, though, remain comparable. That is, there is a small, but stable effect of FYP on purchase behavior.

Figure 5. SEM Model Results with Behavioral Concept Using a Single Item



ATTACHMENT 2 – FINAL MODEL CONSTRUCTS

There were several constructs where data were collected and included originally in the model. However, not all made it through the actual analysis phase of the model. Table 4 shows two things: 1) the number of questions (items) in the construct originally and then finally after the pre-testing, assessment using Cronbach's alpha and factor analysis and 2) the constructs included in the SEM.

Table 4. Model Construct History

Construct	Construct Index		Used in Model?	Model Abbreviation
	Original	Final		
Price Sensitivity	1 Item	1 Item	No	
Perceived Behavioral Control	4 Items	1 Item	Yes	PBC
Product Barrier: Negative View	4 Items	3 Items	Yes	PBDis
Product Barrier: Performance	4 Items	4 Items	No	
Friends & Family Use of CFLs	4 Items	1 Item	Yes	FF
Concern about Energy Efficiency	8 Items	4 Items	Yes	EECon
Concern about Global Warming	4 Items	3 Items	Yes	GWCon
Awareness of Consequences on Environment	3 Items	3 Items	Yes	AC
Trust in Energy Efficiency Information & Claims	4 Items	4 Items	No	
Retailer Messaging	3 Items	3 Items	No	
Orientation to Saving Money-Scale 1	3 Items	3 Items	No	
Orientation to Saving Money-Scale 2	4 Items	4 Items	No	
CFL Purchase, Installation, Storage	5 Items	3 Items	Yes	Beh
Intent to Purchase (in Future)	4 Items	3 Items	Yes	ITA
Personal Responsibility to Act	5 Items	5 Items	Yes	PRA
Exposure to FYP	4 Items	3 Items	Yes	FYP
Price Signal	1 Item	1 Item	Yes	HighPric
Participation in IOU Programs	Sum of 5 Items to 1 variable	1 Variable	No	
Exposure to Media Programs on Environmental Issues	Sum of 5 Items to 1 Variable	3 Variables	Yes	OthMess
Exposure to Energy Efficiency Programs (e.g., Energy Star)	Sum of 6 items to 1 Variable			

Construct	Construct Index		Used in Model?	Model Abbreviation
	Original	Final		
Exposure to Utility Messages	Sum of 5 items to 1 variable			
Education	1 Item	1 Item	No	
Income	1 Item	1 Item	No	
Age	1 Item	1 Item	No	
Ethnicity	2 Items	2 Items	No	

Note: Constructs not used in the model were dropped because they didn't add to variance explained in the model.

A.2 SEM Technical Appendix

A.2.1 Developing the Model

Theories

The model that our team developed to predict CFL purchase intentions and behavior is rooted in several strains of attitude-behavior literature. One major theoretical perspective is commonly referred to as the theory of reasoned action (Fishbein & Ajzen 1975), also sometimes called expectancy-value theories. This group of theories and theorists is highly cognitive in orientation, and focuses on attitudes and subjective norms in predicting behavioral intention, subjective norms being individual beliefs about what is behavior in a particular area.

One aspect of understanding attitudes and behavior that is missing from the theory of reasoned action is something to account for behaviors that include an altruistic component. This is an emotional dimension that requires additional explanation beyond the strictly cognitive. Schwartz (1977) introduced Norm Activation Theory, which includes the idea of personal norms as expressions of what one values, e.g., the environment. Researchers in this area theorize that personal norms are "activated" when a person's values are threatened. A potential result of having one's personal norms activated is taking the step of ascribing responsibility for defending the valued object to oneself. In other words, if something that is personally valued, for example the environment, is threatened, then the person involved feels responsible for contributing to the defense of the environment. The Ascription of Responsibility to the self is a central feature of this theoretical strain.

Dietz, Fitzgerald & Shwom (2005) elaborated Norm Activation Theory by connecting values to beliefs about the consequences of behavior in their Values, Beliefs and Norms theory (VBN). In their thinking, the Awareness of Consequences of behavior tends to imply personal responsibility for addressing these consequences through one's own behavior. Clearly this idea is related to the Ascription of Responsibility described by Schwartz (1977). The contribution of this theory, for our purposes, is mainly in the delineation of Awareness of Consequences as a part of an internal process that underlies behavior decisions.

These theoretical perspectives were the foundation of what we thought was important to measure and model in terms of the targets of FYP messaging. Thus, questionnaire items were taken from existing research in these areas, were sometimes modified from studies only marginally related to our topic, and sometimes taken from energy efficiency research to address concern with energy efficiency. The constructs that were selected for modeling were: Awareness of Consequences (of inefficient energy use and of global warming), Concern about Energy Efficiency, Concern about Global Warming, and Ascription of Responsibility (sometimes called Personal Responsibility to Act). These constructs derived directly from the theoretical and empirical literature.

Empirical Research

The general concept of *Awareness of Consequences* (sometimes under slightly different names) and its impact on behavior intentions and behavior has been addressed by numerous researchers (Barr, 2007; Dietz, Dan, & Shwom, 2007; Guagnano, Stern, & Dietz, 1995; Kaiser, Ranney, Hartig, & Bowler 1999; Norlund & Garvill, 2002; Soonthonsmai,

2001; Stern, Dietz, & Kalof, 1993; Stern, Dietz, & Guagnano, 1995). The concept of *Ascription of Responsibility* (to self), and its relation to behavior, also sometimes slightly renamed, has been addressed by several researchers (Barr, 2007; Berenguer, Corraliza, & Martin, 2005; Guagnano, et al., 1995; and Kaiser, et al., 1999). The place of *Concern for Global Warming* and/or the environment in predicting relevant intentions and behaviors have been addressed by Berenguer, et al. (2005), Diekmann, & Preisendorfer (2003), Lee & Holden (1999), and Weigel & Weigel (1978), among others. Some find these concepts to be highly predictive of actions, and others find them less so, but they are clearly considered important in explaining the types of behavior we are addressing here. Beyond that, they are the attitude areas that the FYP program is aimed at, so it seemed essential to include them in any model that seeks to evaluate the impact of this program.

While not identified with particular theoretical perspectives, there are other concepts as well that are commonly used as predictors in literature pertaining to behavior of the type we are concerned with here. These concepts will be described below, and citations for studies that have included them in the past will be noted, where appropriate.

Trust in information sources has been shown by Dietz, et al. (2007) and Barr (2007) to be a strong predictor of support for climate change policies, and has therefore been included in our model as a predictor of attitudes. Similarly, *Political Orientation* and traditionalism have been found to be moderate to strong predictors of attitudes (Dietz, et al., 2007; Stern, et al., 1995).

Perceived Behavioral Control has often been included in studies predicting green behavior (Bamberg & Schmidt, 2003; Davies, Foxall, & Pallister, 2002; Oom Do Valle, Rebelo, Reis, & Menezes, 2005) because not everyone feels they have control over family conservation behaviors or relevant purchases, and this can impinge on behavior regardless of attitudes.

Barriers to purchasing energy efficiency items such as CFLs can be thought of in terms of structural market barriers, but they can also be viewed from the perspective of individuals, which is most appropriate to this type of study. We addressed availability of product, hassle avoidance, product awareness, knowledge of benefits, first cost, environmental concerns, limited applications/light quality, general dislike of CFLs, appearance, and perceived performance problems, which we considered product-related barriers. These choices were based on our own experience in doing research in the energy efficiency field. In the next paragraph we address barriers that are more personal.

Price Sensitivity and *Orientation to Saving Money* are obvious factors that can impinge upon intentions and behavior where purchases are involved. We categorized them as personal barriers to making choices that are cost-effective. These were generally not included in studies we reviewed in exactly these terms, but other similar concepts were: convenience (Barr, 2007; Saphores, Nixon, Ogunseitan, & Shapiro, 2006), cost (Hunecke, Blobaum, Matthies, & Hoger, 2001) and personal cost (Guagnano, Stern, & Dietz, 1995).

Two factors were thought to potentially impact purchase barriers. The first, the use of CFLs by *Friends and Family* is based on the most fundamental precepts of social psychology, as exemplified by Kurt Lewin, who said that it is easier to change people within groups than as individuals (1947, 1948). The second, and more recent, Baron & Misovich (1993) have observed that people and groups outside the individual have to be taken into account in explaining behavior change. These observations could argue for studying many groups to

which respondents may belong, but we settled on asking about friends and family use of CFLs, which could have the effect of lowering barriers to using CFLs.

Past *Participation in Utility Programs* could be conceived as lowering both personal and product-related barriers, and were therefore addressed in this study.

Sense of Immediacy is a concept that was in our earliest models, but was not taken from theoretical or empirical literature. It was our team's way of addressing the degree of urgency respondents feel about saving energy and the planet.

Belief that Energy-Efficiency is a Movement is another concept that entered into our early models as acknowledgement of the power of social psychology, but was not based in a particular theory or strain of research.

Dietz, et al. (2007) and Stern, et al. (1995) showed that Political Orientation and traditionalism are predictors of green behavior of various kinds. We included this in our study as well.

Finally, demographic variables (Social Economic Status [SES], age, and gender) have also been included by researchers explaining green behavior, and were included here as well.

Finalizing Theoretical Constructs

The development of an initial model and the potential constructs to populate it was the result of a complex and multi-stage process. A number of alternative predictive models were developed by various members of the group and reviewed, modified, and reviewed again. This process led to the constructs listed in Appendix Table 1. These were all included in a pilot study, whose aims included assessing the best composition of questionnaire items for each construct and to reduce the size of the questionnaire by doing preliminary tests of the efficacy of some of the constructs for which some doubt existed within our group. There was also a second pilot that tested the decisions made after the first. Because some of these constructs had not been the subject of research in energy efficiency, some preliminary testing of which items act as indicators of which constructs in the most efficient manner were not completely determined in advance. One specific example of this is a construct that we refer to as Personal Responsibility to Take Action. That is a condensation of multiple constructs from the literature such as Personal Norms (Fishbein & Ajzen 1975), Ascription of Responsibility (Schwartz, et al., 1977), and Active Concern (Barr, 2007). Research on each of these constructs from the literature involved questionnaire items to measure it, and it is quite clear that the three mentioned have considerable overlap in their conceptual underpinnings. Again, they had not been systematically researched in the field of energy efficiency and it was not entirely clear which items or combinations would best represent the general idea of individuals feeling responsible for acting on their beliefs about energy efficiency and global warming. To address this issue, multiple items for each construct were included in the original pilot questionnaire and subjected to factor analyses. The result of that process was ten original questions. The analyses on these questions resulted in elimination of five of them, leaving five to measure the general construct of Personal Responsibility to Take Action.

Appendix Table 1 reveals the decisions made about each construct through this process.

Appendix Table 1
Original Constructs and Their Status in Questionnaires

Construct Considered	Disposition	Reason for Elimination or Modification
Awareness of consequences of global warming	Included in pilot & final q'aire	
CFL Purchase	Broadened to CFL behavior: purchase, installation, and storage	Broader conceptualization more appropriate to theoretical understanding
Concern about energy efficiency	Included in pilot & final q'aire	
Concern about global warming	Included in pilot & final q'aire	
Experience of CFL Giveaways	Included in pilot & final q'aire as part of past participation in utility programs	
Friends & Family Use of CFLs	Included in pilot & final q'aire	
Knowledge of CFL characteristics	Included in pilot & final q'aire as potential barriers	
Orientation to saving money	Two established scales included in pilot and final q'aire & treated separately	
Participation in energy efficiency programs	Included in pilot & final q'aire as part of past participation in utility programs	
Perceived behavioral control	Included in pilot & final q'aire	
Personal Barriers (including short-term thinking, risk aversion, aesthetics, political orientation, predisposition to act, purchasing behavior)	Divided into Political Orientation, general purchasing behavior (Orientation to Saving Money), aesthetics (Dislike of CFLs).	No reason to think personal barriers would be inter-correlated to form a scale.
Price signal	Included as question on what type of store respondents purchase light bulbs in	

Construct Considered	Disposition	Reason for Elimination or Modification
Product-Related Barriers	Divided into Performance, Availability barriers	Factor analysis results from pilot studies
Self-efficacy	Modified to Sense that action will make a difference, or sense that energy efficiency is a movement	Construct more specific to program was desired
Sense of Immediacy	Included in pilot but not final q'aire	Not related to outcome variables in pilot
Sense that Action will make a difference (or that energy efficiency is a movement)	Included in pilot but not final q'aire	Not related to outcome variables in pilot
SES	Included as household income & education	
Trust in energy efficiency & GW messages	Included in pilot & final q'aire	
Willingness to Act	Modified to Intention to Act	Intention to purchase CFLs is more focused on the goal of the program

After the pilot studies, a revised model was constructed by the team to serve as the guide for statistical testing with SEM, which is the subject of section 0.

Model Architecture

Appendix Figure 1 shows the thinking that was the end point of the theoretical development process and the starting point for the model to be estimated. The ovals represent constructs that are connected to each other by directional arrows. The arrows imply the expectation that constructs have a causal impact on the construct to which the arrow points. A full expression of the model would also show the indicators that were intended to measure each construct. These were not included in the figure because of its complexity. (Adding the indicators, of which there were at least three for each construct, makes the picture very difficult to look at.) The indicators for each construct, all based on questionnaire items, will be discussed in Section 0.

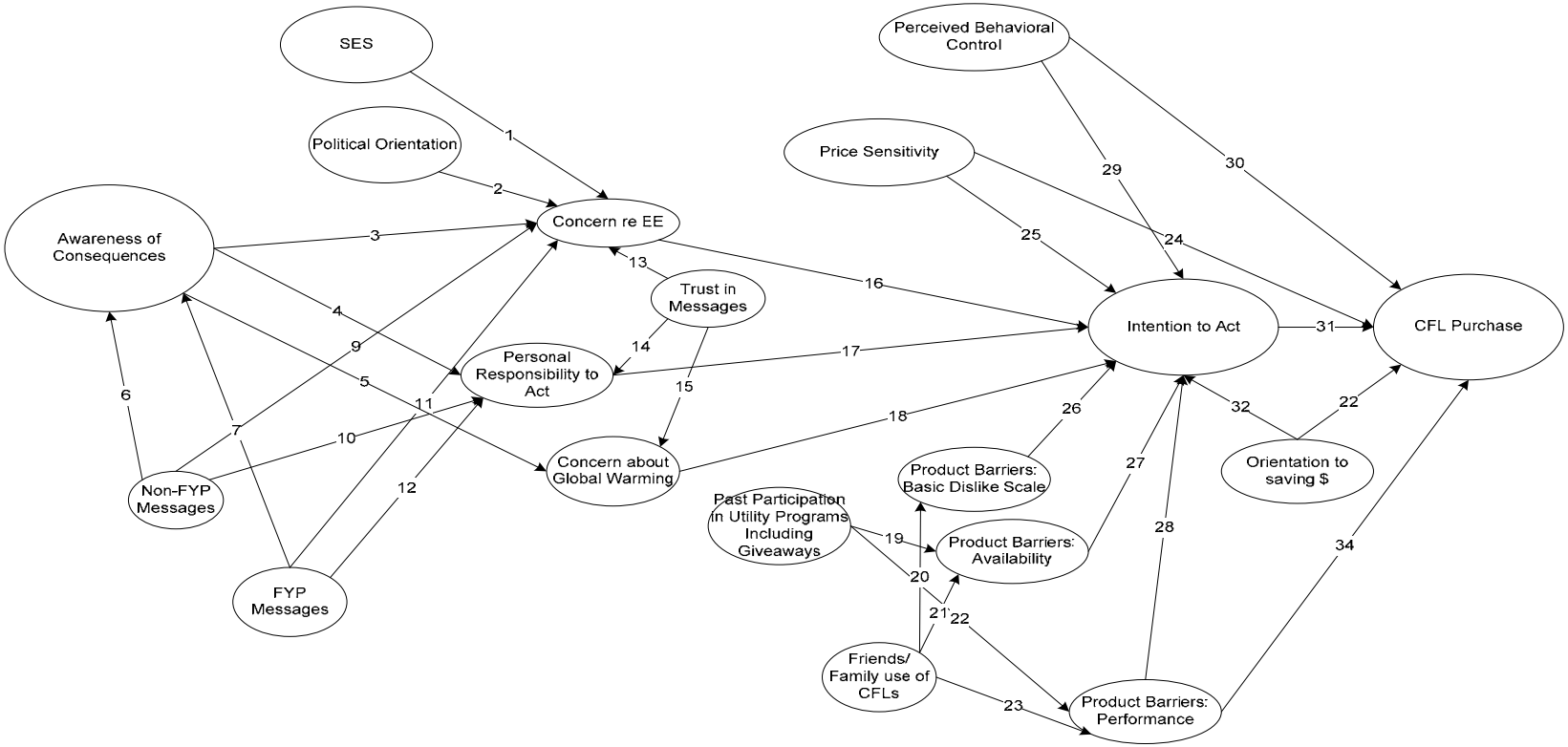
The banner at the top of Appendix Figure 1 shows an overview of the model that guided the SEM analysis. The flow of the model goes generally from left to right, with the core of it being defined by Knowledge, Attitudes, Intention and Behavior; the other two categories shown in the banner contain constructs that feed into or influence the core constructs. They are characteristics and experiences that are either proximal to behavior/intentions or are not. Those that are not proximal to behavior/intention are theorized to impact the attitude variables and thus impinge upon behavior/intention through their effect on the various types

of attitudes. Those that are proximal to behavior/intention are viewed as directly influencing intention and behavior. The barrier constructs are shown as influencing intention and sometimes behavior constructs, and the family and friends as well as past participation constructs were conceived to have their impact on the barriers.

The FYP messaging together with retailer and other messaging were expected to work through the attitude group because that is where they were targeted. It should be acknowledged, however, that the construct ovals could not always be exactly aligned with their banner headings without causing causal arrows to cross other arrows and ovals confusingly.

Appendix Figure 1
Hypothesized Model

Knowledge	Characteristics & experiences not proximal to behavior	Attitudes	Characteristics & experiences proximal to behavior	Intention	Behavior



A.2.2 Preliminary Analyses

Addressing Distributional Issues

The structural equation modeling (SEM) method, using the maximum likelihood approach is more sensitive to deviations from normality than traditional methods of partitioning variance such as regression and ANOVA. In particular, the standard errors of estimators are strongly affected by distribution problems. Methods referred to as robust estimation methods have been offered by most SEM software developers to overcome this obstacle since it is sometimes difficult to find normally distributed variables for analysis. Nevertheless, it is worthwhile to try to develop measures that conform to the assumption of normality.

Asking questions of Californians about their attitudes toward energy efficiency, global warming, and CFLs is unlikely to produce normally distributed variables. Residents of this state, by and large, are convinced on these issues, though clearly not all are. The two pilot surveys discussed earlier were partially aimed at developing questions that would not result in highly skewed distributions. Attitude and intention questions were formulated and re-formulated to achieve that end. In spite of these efforts, questions asking about concern about global warming, energy efficiency, and personal responsibility to contribute to solutions, resulted in between 36% and 50% of responses falling into the most extreme of seven response categories. Other variables were also skewed, but not so extremely.

Multiple approaches to the skewness issue were tried, including using transformations such as square roots, logs, and negative reciprocal roots for positively skewed variables, and squares and cubes for those negative skewed. For many of the questionnaire items, these methods did not produce variables that could be characterized as normally distributed. For those, collapsing values into trichotomies and dichotomies was tried. Even these remedies were not ideal as they did not result in truly normal continuous variables.

The transformed variables were then used in the development of scaled constructs. However, this version of the variables did not scale well. Finally, we reverted to the original versions of the variables, but used robust methods to ameliorate the distributional problems. For all remaining analyses, estimates were based on these robust estimation methods.

The Measurement Model

Using the final data from the full sample, the first step in estimating the theoretical model was to develop the measurement model. The SEM method involves estimating the structural relations among constructs simultaneously with the measurement error for each construct. This simultaneous process allows the measurement error to be taken into account in the estimation of structural relations. While it is not necessary to estimate the measurement model as a first stage, in a model as complex as this one, it seemed prudent to work out any problems in measurement before moving on to structural relations.

The effort to develop and finalize the measurement of each construct was itself divided into two stages. The first step was to consider elimination of some items that did not contribute as expected to the measurement of each construct. This was judged first by the most common measure of internal consistency reliability, Cronbach's alpha. In addition, each

construct was submitted to confirmatory factor analysis to determine the fit of the construct measurement model to the covariance matrix involving those variables. Final decisions were based on these results and are reflected in Appendix Table 2 (constructs shown in alphabetical order), which shows the disposition for each item for each construct, and the Cronbach's alpha for all constructs as they were ultimately measured. Each questionnaire item number is also shown so they can be seen in their original wording.

Appendix Table 2
Questionnaire Items Measuring Constructs Included in Final Questionnaire Dispositions and Cronbach's Alphas

Item Number (Questionnaire)	Abbreviated Description	Item Disposition & Best Cronbach's Alpha
Awareness of Consequences		0.84
M2D	Household e impacts environment	
M2F	Conservation reduces GW	
M2G	Household e impacts GW	
Concern Regarding Energy Efficiency		0.65
E1A	Not concerned re e use	
E1B	My right to use all e I want	
E1C	EE improvement not priority	
E1D	Household e use not important	
E2A	E supplies problem in future	Dropped from Construct
E2B	All should save e	Dropped from Construct
E2C	Should use less e instead of	Dropped from Construct
E1E	Seeks to buy EE products	Dropped from Construct
Concern Regarding Global Warming		0.81
GW1A	Seek info on GW	
GW1B	Make point pay attn to media on GW	Dropped from Construct
M2I	I believe GW is occurring	
M2H	Concern re coal/gas on GW	
SES		NA
X8	Education	
X9	Income	

Friends & Family Use		0.67
F1	Friends & family use CFLs?	
F2	Friends & family like CFLs?	Dropped from Construct
F3	Guess if friends will use CFLs	Dropped from Construct
F3A	Friends & family encrge CFLs? y/n	Dropped from Construct
FYP Messages (Exposure)		0.62
FY5	Amt exp to ads	
FY6	# times seen ads	
FY1A-D	Heard FYP ads	
FY2	Seen FYP past 12 mo	
Intention to Act		0.89
FP1a	Next purchase-CFL	Dropped from Construct
FP1B	No doubt I will buy CFL	
FP1C	Next replacement-CFL	
FP2	%future purchases-CFL	
Lighting Purchases & Installations		0.77
L3	# CFLs purch last 12 mos	
L4	# CFLs installed	
L5	# Incand purchased	Dropped from Construct
L6	# Incand installed	Dropped from Construct
L7	% CFLs	Dropped from Construct
L2	Purch a CFL in last 12 months-y/n	Dropped from Construct
L3a	# CFLs in Storage	
L4a	Most recent purchase period	Dropped from Construct
L5a	Incand storage	Dropped from Construct
Orientation Towards Savings—A		0.73
OS1A	Always compare prices	
OS1B	Check prices even small items	

OS1C	Imp to get best prices	
Orientation Towards Savings—B		0.81
OS1D	Price equals quality	
OS1E	You get what you pay for	
OS1F	Price indicates quality	
OS1G	Pay more for best	
F4	Household pay attn to utility bills?	Dropped from Construct
Other Messages		0.55
I1TOT	Media programs*	
UMTOT	Total utility messages**	
I2	EE Prog exposure (not participation)***	
Participation in IOU Programs		NA (No reason to expect a scale)
IU1A	Recd rebate?	
IU1B	Recd discount?	
IU2	Free CFL?	
IU3	Free CFL in last 12mo?	
IU4	Purch CFL with utility on box?	
# Yeses	Sum of Yeses to IOU participation	
Perceived Behavioral Control		0.10
BC1A	Nothing can stop me from CFL	
BC1C	Someone else buys CFLs	Dropped from Construct
BC1D	No one cares if I install CFL	Dropped from Construct
BC2	How much hh mem object to CFLs	Dropped from Construct
Personal Responsibility		0.82
PN1A	Feel guilt if too much e	
PN1B	Feel bad if didn't reduce e	
PN1D	Feel guilty if purch things that use e	

AR1A	Do not feel resp for conserving e	
AR1B	Do not feel pers resp for greenhouse	
Political Orientation		0.70
PO1A	Liberal/conservative	
PO2	Party	
Price Sensitivity		NA
PS1A	Price willing to pay for CFL: $8.00	Used in PS1
PS1B	Price willing to pay for CFL: $6.00	Used in PS1
PS1C	Price willing to pay for CFL: $4.00	Used in PS1
PS1D	Price willing to pay for CFL: $2.00	Used in PS1
PS1E	Price willing to pay for CFL: $0.99	Used in PS1
PS1F	Price willing to pay for CFL: $0.20	Used in PS1
PS1	Highest price willing to pay	
Price Signal--Place R Buys Light Bulbs		NA
PS0M1-M4	Drug and groc v home imp & big box	
Product Barriers-Dislike		0.77
PB3A	CFLs not worth cost	
PB3D	CFLs don't meet needs	
PB3F	Don't like CFLs	
Product Barriers-Other		NA (Not intended to be scale)
PB1	Availability of CFLs	
PB3B	CFL disposal concerns	
Product Barriers-Performance Concerns		0.37
PB2D	CFLs take longer to come on	Dropped from construct
PB2A	CFLs last longer	
PB3E	Diff to install CFLs	
PB3G	CFLs don’t save money	Dropped from construct
Retailer Messaging		0.85

OA1	Retailers y/n/m	
OA2	Retailers-how much exp 1-7	
OA3	Retailers-how many times 1-3	
Trust in energy efficiency Information and Claims		0.84
T1A	Prod claims	
T1B	GW or environ damage	
T2B	Scientists	
T2C	Environ	
*Media Program Items		
I1A	Docs/movies	Used I1TOT
I1B	TV news	Used I1TOT
I1C	TV shows	Used I1TOT
I1D	Talk radio	Used I1TOT
I1E	News radio	Used I1TOT
I1TOT	(Sum of A-E yesses)	Used in "Other Messages"
**Utility Messages		
UM1A	Utility mess-SCE	Used in UMTOT
UM1B	Utility mess-PG&E	Used in UMTOT
UM1C	Utility mess-any utility	Used in UMTOT
UM2	How much exposure 1-7	Dropped from Construct
UM3	How many times 1-3	Dropped from Construct
UMTOT	(Sum of yesses to a,b,&c)	Used in "Other Messages"
***EE Prog exposure Items		
I1AB	Click it or Ticket	Used I2
I1AD	FYP (exclude from total)	Used I2
I1AE	Flex alert	Used I2
I1AF	Energy Hog	Used I2
I1AH	Energy Star	Used I2

I1AI	Change a light change the world	Used I2
I2	(Sum of yeses)	Used in "Other Messages"

A.2.3 Estimating the Final Model

Starting with the model shown in **Error! Reference source not found.**, the process of testing the model was done in stages, again due to the complexity of the model and the obvious potential for strong multi-collinearity. While it is possible and desirable to allow the variables within the model to covary, entering too many constructs that are highly inter-related would still cause problems in the model.

The first stage of modeling considered only the AKA (Awareness, Knowledge & Attitude) group as it predicts Intention to Act. The model focused first on predicting Intention from the attitude group. This group of constructs constitutes the core of the theoretical model. Other variables were conceived to impinge upon this set of constructs that represent an internal process within consumers. In other words, the model postulates that individual characteristics outside of the consumer's concern with energy efficiency, global warming, etc, as well as external events and processes (such as the program intervention) and social networks, will have an effect on the formation of attitudes and on their relation to intentions specific to CFL purchase (Intention to Act). Conceptually, then, it made sense to us to establish the attitude chain (awareness, knowledge, attitudes) and its relation to Intention to Act as a model core, and to add other processes and characteristics to that core model.

Specifically, SES, political orientation, and trust in relevant messages were conceived to affect attitudes which, in turn, affect intention. Other factors, such as price sensitivity, perceived control over potential CFL purchase, orientation toward saving money, product barriers, past participation in utility energy efficiency programs, and CFL use by friends and family, were all expected to affect intention, regardless of attitudes, although the friends and family effect was hypothesized to be on product barriers, which would affect intention.

The original model further hypothesized that actual CFL behavior (purchase, installation and storage) would be impacted by Intention to Act, and most of the variables affecting constructs predicting Intention (See **Error! Reference source not found.**).

As different components of the model were added, measures of fit (including chi-square goodness-of-fit, CFI, and RMSEA) were used to assess the adequacy of the model at each stage. When these fit indices were inadequate, diagnostic measures (LaGrange Multiplier in EQS language, Modification Index in LISREL language) were examined for guidance in what could be problems in the model. These indices reveal how the central measure of fit, chi-square, would be changed if a particular parameter were freed rather than fixed[1]. Similarly, the Wald statistic was consulted for the opposite type of problem: to identify free parameters that were unnecessary to the fit of the model. When a hypothesized model

[1] A parameter is "free" if it is left to the statistical software to estimate its size and direction; it is "fixed" if the modeler sets it to zero, indicating it is expected not to be necessary to the model, or is set in some other way, such as setting two paths to be equal or setting one path to be stronger than another.

segment showed inadequate fit, the diagnostic statistics were consulted and used *when doing so was consistent with the theory* that guided the research. For instance, while it was originally hypothesized that Personal Responsibility to Act, Concern about Global Warming, and Concern about Energy Efficiency would all have direct paths to Intention to Act, and being inter-correlated among themselves, the most efficient model allowed only one direct path between Personal Responsibility to Act and Intention to Act. The Concern constructs are best modeled as predictors of Personal Responsibility to Act, thus acting only indirectly on Intention.

The following represents the sequence in which the final model was tested:

1. The AKA group predicting Intention to Act was estimated and modifications made, resulting in a core partial model with paths among the ADA group and their prediction of Intention to Act.
2. The characteristics and experiences proximal to the outcome variables predicting Intention to Act were estimated and modifications made, resulting in a second partial model.
3. The characteristics and experiences not proximal to the outcome variables predicting the AKA group were added to the partial model from step 1 and modifications made, resulting in an expanded core model.
4. The partial model from step 2 was added to the partial model from step 3; no modifications were necessary after that joining.
5. The message constructs (FYP, Retailer, and Other messages) were added to the result of step 4, and modifications made.
6. The CFL behavior construct was added to the model with the constructs hypothesized to predict it entered as well, and modifications made.

All modifications to the original model will not be listed here, but each was made according to the process and the principles described above. The final resulting model produced a non-significant chi-square (a measure of good fit with the covariance matrix), as well as good fit indices (CFI=.90, RMSEA=.05). Over 63% of the variance in Intention to Act was explained by the model, and 15% of the variance in CFL behavior.

The final structural model is shown in Appendix Figure 2 and the final measurement model is seen in Appendix Table 3.

Appendix Figure 2
Final Structural Model

Appendix Table 3
Measurement Model

Item Number (from Q'aire)	Description	Factor Loading (Standardized)
Awareness of Consequences		
M2D	Household e impacts GW	0.70
M2F	Conservation reduces GW	0.84
M2G	Household e impacts GW	0.88
Concern Regarding Energy Efficiency		
E1A	Not concerned re e use	0.45
E1B	My right to use all e I want	0.57
E1C	EE improvement not priority	0.52
E1D	Household e use not import	0.58
Personal Responsibility		
PN1A	Feel guilt if too much e	0.72
PN1B	Feel bad if didn't reduce e	0.73
PN1D	Feel guilty if purch things that use e	0.67
AR1A	Do not feel resp for conserv e	0.60
AR1B	Do not feel resp for greenhouse	0.70
Concern Regarding Global Warming		
GW1A	Seek info on GW	0.60
M2I	I believe GW is occurring	0.76
M2H	Concern re coal/gas on GW	0.88
FYP Messages		
FY5	Amount of exposure to ads	0.35
FY6	# times seen ads	0.59
FY1A-D	Heard ads	0.80
FY2	Seen FYP past 12 mo	0.84

Other Messages		
QI1TOT	Media programs	0.60
UMTOT	Total utility messages	0.20
Q12	EE Prog exposure (not participation)	0.88
Perceived Behavioral Control		
BC1A	Nothing can stop me from CFLs	NA
Intention to Act		
FP1B	No doubt I will buy CFLs	0.70
FP1C	Next replacement-CFL	0.91
FP2	% future purch CFL	0.88
Friends & Family		
F1	Friends & family use CFLs?	NA
Product Barriers-Dislike		
PB3A	CFLs not worth cost	0.64
PB3D	CFLs don't meet needs	0.72
PB3F	Don't like CFLs	0.83
Lighting Purchases & Installations		
L3	# CFLs purch last 12 mos	0.95
L4	# CFLs installed	0.87
L3a	# CFLs in Storage	0.58
Price Signal--Place R Buys Light Bulbs		
PS0M	Drug & groc v home imp & big box	

A.2.4 Variables Deleted from the Final Model

Some constructs were eliminated from the originally predicted model:

1. Retailer Messages
2. Trust in Messages
3. Two measures of Orientation to Savings
4. Price Sensitivity

5. Participation in past utility programs
6. Political Orientation
7. Education
8. Income
9. Availability of CFLs
10. Product Barriers: Performance Problems

A natural interpretation of the fact that these constructs did not perform in the model is that they do not predict intentions or behavior. Experienced modelers know that this is often not the correct interpretation. In any modeling method, the main alternative explanation for this is that the "failed" variables were highly correlated with other predictors in the model. This problem of multi-collinearity is dealt with more effectively in SEM methods than standard regression methods, but it can still happen that variables will not perform in the model due to high correlations with other variables. Because our theoretical approach to explaining and estimating causal relations between program interventions and outcomes has been uncommon in our field, it is important to communicate what variables have been predictive and which have not. Appendix Table 4 shows how the constructs that were dropped from the original model are correlated with the variables that remain in the model.

It is not a straightforward exercise to show how multiple-indicator constructs are correlated with each other. The constructs in an SEM model are not usually single variables as in a regression model. Rather, they represent a linear combination of multiple variables, weighted by their factor loadings on the latent construct. One approach to showing correlations among these constructs would be to show a correlation matrix of all indicators. Such a matrix would be large and difficult to interpret, however. For purposes of giving the reader an idea of how the dropped constructs are related to constructs in the model, simple means of indicators for the constructs that had multiple indicators were calculated to produce a crude version of the construct's value. The correlations among these calculated variables are shown in Appendix Table 4.

It can be seen that one of the dropped variables most related to all variables in the model is Trust. This refers to trust in the messages that have been seen and heard concerning energy efficiency and global warming. It is highly related to Awareness of Consequences and to Concern with Global Warming, as well as Personal Responsibility. At the very least, we can say that the issue of trust should not be eliminated from future studies based on the fact that it did not perform well in this model. Going further, it is reasonable to say that trust should be carefully considered in future research, including the possibility that there is reciprocal causality between Trust and Awareness of Consequences, and Concern with Global Warming, and maybe other variables.

Political Orientation is another variable that should not be overlooked, as it also has a clear relation to many critical variables in this model, including Awareness of Consequences, Concern with Global Warming and Personal Responsibility. Political Orientation has been found to be important in other studies (see Section 0) and we can see that it would have been important in this one too in the absence of some other model variables. It could be productive to consider this variable as a possible moderator in the model, possibly changing

the nature of the covariance matrix. In other words, it may be a good path to explore by testing the model on respondents scoring high or low on Political Orientation or Trust.

Also of interest is the Product Barrier of Performance: it is a strong predictor of Intention to Take Action, yet did not survive in the model. The very likely explanation of this is that all barriers were inter-related, which seems to support the idea that it is really a general dislike of CFLs that matters, and if a consumer just doesn't like them or think they meet his/her needs, they will find other objections and barriers to report as well.

Appendix Table 4
Correlations between Constructs in the Model with Constructs Dropped from Model

Constructs Dropped from Model	Constructs in Final Model						
	Awareness of Conse-quences	Concern with ee	Concern with GW	Personal Responsi-bility	Product Barr: Dislike	Friends & Family Use	Intention to take Action
Availability of CFLs	-.142**	-.127**	-.104**	-.149**	.284**	-.140**	-.260**
Education	-.041	-.020	.012	-.044	.077*	.016	-.073*
Income	-.039	.021	-.006	-.057	.087**	.043	-.058
Orientation to Savings-A	.171**	.142**	.145**	.201**	-.068*	.020	.127**
Orientation to Savings-B	-.040	.112**	-.046	-.060*	.012	-.076*	.004
Participation in Past Utility Programs	.063*	.023	.080**	.092**	-.023	.144**	.090**
Political Orientation	-.336**	-.163**	-.367**	-.245**	.111**	-.065*	-.168**
Price Sensitivity	.288**	.200**	.283**	.278**	-.275**	.212**	.382**
Product Barr: Performance	-.243**	-.205**	-.199**	-.237**	.492**	-.267**	-.457**
Retailer Messages	.169**	.148**	.228**	.169**	-.123**	.143**	.121**
Trust in Energy efficiency Info & Claims	.662**	.270**	.706**	.550**	-.305**	.123**	.339**

*Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

A.2.5 Program Effects on CFL Purchases

While the model presented, using three indicators of CFL behavior (purchase, installation and storage) is instructive in various ways, a slightly modified version of the model can be used to estimate program influence on actual purchases over the 12 months prior to the survey. This was accomplished by re-estimating the model with only the 12-month purchase variable as the dependent variable in the model, so the model is then predicting only purchases. Then, the model can be used to estimate the number of CFLs purchased that might be attributed to program exposure. This was done, and the results are shown in **Error! Reference source not found.**. The process by which these figures were calculated is also described below. We start with the fact that the mean number of CFLs purchased by the study sample is 6.53, and the standard deviation is 6.48.

Table 5
Summary of Estimates of Program Effects

Measure	Estimate	95% CIs
Basic Model Results		
Standardized path coefficient predicting CFLs purchased	0.03	0.01 to 0.05
Standard error of standardized path coefficient	0.01	
Translations into per-household CFLs-purchased terms		
Program effect due to 1 s.d. of FYP exposure	0.19	0.07 to 0.32
Program effect due to 2 s.d. of FYP exposure	0.39	0.13 to 0.64
Translations into statewide household terms		
Number of CFL purchases attributable to FYP exposure	5,176,313	1,794,455 to 8,558,171

Explanation of Calculations

The mean of 6.53 incorporates the effect of the FYP program as well as all other influences. The first question is, What part of these purchases can be attributed to FYP? The answer begins with the standardized path coefficient for the total FYP effect on CFL purchases that includes both direct and indirect effects. That coefficient is 0.03. The interpretation of this coefficient is that, as exposure to FYP increases by one standard deviation, the increase in CFLs purchased goes up 0.03 standard deviations. Thus, the increment in CFL purchases due to a one standard deviation increase in FYP exposure is 0.19 (0.03 * 6.48).

This is one way to think of the program effect. A more intuitive way may be to compare what would be purchased by those with *two* standard deviations less exposure to FYP compared to those with mean exposure. The reason this comparison is a good one is that two standard deviations of exposure below the mean exposure reflects a level of exposure of almost zero. This mimics what is often done with standard regression models that are evaluated at the mean (of all predictors) and again evaluated where the intervention variable is set to zero, using unstandardized coefficients. The difference in the predicted CFL purchase value between that produced by the mean intervention level and that produced by an equation with the intervention variable at zero is commonly interpreted as the program effect. While it is not feasible to evaluate the model produced by this study in this same way (due to the complexity of the model) it is possible to approximate that procedure using the model's standardized values and analyzing the model in terms of standard deviations. In other words, the figure of two standard deviations' less exposure to FYP represents exposure to the program close to zero. So, the number of light bulbs' difference due to two standard deviations of exposure is 0.39 (2 * 0.19 + rounding error). One way to interpret this is that on average, the program effect per household over 12 months was 0.39 CFLs[2]. If we apply this figure to 13,308,346 households in California, the statewide impact would be estimated at 5,176,313 bulbs (0.39 * 13,308,346).

To provide a confidence interval around the estimated program effect, we start again with the standardized path coefficient of 0.03, and its standard error of 0.01. A 95% confidence interval around the 0.03 coefficient was calculated in the usual way: p ± (1.96 * se p). This results in a lower bound of 0.01 and an upper bound of 0.05. Thus, we are 95% certain that the true standardized program effect is contained in the range of 0.01 to 0.05.

The next step is to calculate a confidence interval around the program effect due to a one standard deviation increase (or decrease) in FYP exposure. The effect due to one standard deviation difference in FYP exposure (calculated above) is 0.19. The lower bound of the CI around that effect is 0.07 (the lower bound of the CI around 0.03, times the standard deviation of mean CFLs purchased=0.01 * 6.48) to 0.32 (the upper bound of the CI around 0.03, times the standard deviation of mean CFLs purchased=0.05 * 6.48). The logic of this calculation is that the lower bound of the CI around the standardized path coefficient of 0.03 is expressed in standard deviation units, as is the 0.03 value. Thus, the translation of all of those figures into CFL terms requires that the standardized value be multiplied by the standard deviation of CFL purchases.

The next step is to translate the CI around the one standard deviation program effect in CFL terms (0.07 to 0.32 around the 0.19 CFL effect) to the CI around the two-standard deviation effect. The two-standard deviation effect of 0.39 calculated above, is at the center of the 95% CI of 0.13 to 0.64. These lower and upper bounds are arrived at by multiplying the one-standard deviation effect CI bounds by 2 to arrive at the two-standard deviation effect CI (0.07 * 2 and 0.32 * 2, plus rounding error).

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[2] The comparison described here is a reasonable approximation of the counterfactual (i.e., what would have happened in the absence of the program). Net impacts are typically defined as the delta between what would have happened in the absence of the program and what happened in the presence of the program. The 0.39 figure is that delta.

It is also of interest to generalize the sample results to the statewide impact of FYP. The program effect at the statewide level would be 0.39 times the number of households in the state (0.39 * 13,308,346) as indicated above, resulting in CFLs purchased attributable to the program, of 5,176,313. The 95% confidence interval around that number is determined by multiplying the lower and upper bounds of the sample confidence interval by the number of households. This results in a lower bound of 1,794,455 and an upper bound of 8,558,171 (0.13 * 13,308,346 and 0.64 * 13,308,346).

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A.3 Data Collection Instrument

ATTACHMENT 3 – FINAL SURVEY FOR SEM EFFORT

Structural Equation Modeling Questionnaire-CFL

Fielded November 2008

Introduction:

Thank you for agreeing to participate in our survey. Your feedback is very important to us.

This survey is designed to help us understand consumer attitudes and behaviors. This is not a sales effort of any kind. We want to assure you that your responses to our questions will be kept strictly confidential. The survey should take approximately 15 minutes to complete.

If you have any questions, concerns, or problems with the survey, please contact Matthew Grady at MatthewGrady@opiniondynamics.com or click here.

Screener

S1.	Do you work for a(n)…	Yes	No	
1.	Electric or gas utility company	○	○	[THANK AND TERMINATE]
2.	Hospital	○	○	
3.	Food manufacturer or distributor	○	○	
4.	marketing, market research, or advertising firm	○	○	[THANK AND TERMINATE]

S2. Below are examples of screw-in light bulbs.

[INSERT PHOTOS CFLs, INC1 and INC2]

In the last 12 months, have you purchased any screw-in light bulbs similar to the ones shown to you here?

1. Yes
2. No [THANK AND TERMINATE]

S2a. Were you able to view the light bulb images we just showed you?

1. Yes
2. No [THANK AND TERMINATE]

Lighting Purchase

L1. CFLs (Compact Fluorescent Lamps) are light bulbs, usually shaped in a spiral ("twirly") or in a double U-shape, that are advertised as using less energy than normal light bulbs. Below are a few examples of CFLs.

[INSERT CFLs Image]

How familiar are you with CFLs? Would you say that you are…

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

[SKIP TO L5 IF L1=4]

L2. In the last 12 months, have you purchased a compact fluorescent light bulb (CFL)?

1. Yes
2. No

[SKIP TO L5 IF L2=2]

L4a. Think back to when you purchased your CFLs. Approximately when did you make your most recent purchase? [INSERT BREAK]

If you cannot remember the exact date, please provide your best estimate.

Last Fall: September 2007-November 2007	Last Winter: December 2007-February 2008	Last Spring: March 2008-May 2008	This Summer: June 2008-August 2008	This Fall: September 2008-October 2008
○	○	○	○	○

L3. Approximately how many CFLs have you purchased in the last 12 months? If you purchased a multi-pack please count each bulb separately. [INSERT BREAK]

If you cannot remember the exact number, please provide your best estimate.

[Numeric Open End, 1 up to 100]

L3a. Excluding those that you have purchased in the last 12 months, approximately how many CFLs have you had in storage over the last 12 months?

If you cannot remember the exact number, please provide your best estimate.

[Numeric Open End, 0 up to 100]

[Skip if Sum from L3 and L3a =0]

L4. Approximately how many of the [INSERT SUM FROM L3 & L3a] CFLs you purchased or had in storage over the last 12 months have you *installed*? [INSERT BREAK]

Again, if you cannot remember the exact number, please provide your best estimate.

[Numeric Open End, 0 up to 100]

[ASK ALL]

L5. Incandescent light bulbs are generally thought of as "traditional" light bulbs. Below are pictures of incandescent light bulbs.

[INSERT INC1 and INC2 Image]

Approximately how many incandescent light bulbs have you purchased in the last 12 months? If you purchased a multi-pack please count each bulb separately. [INSERT BREAK]

Again, if you cannot remember the exact number, please provide your best estimate.

[Numeric Open End, up to 100]

L5a. Excluding those that you have purchased in the last 12 months, approximately how

many incandescent light bulbs have you had in storage over the last 12 months?

If you cannot remember the exact number, please provide your best estimate.

[Numeric Open End, 0 up to 100]

[Skip if sum of L5 and L5a = 0]

L6. Approximately how many of the [INSERT SUM FROM L5 & L5a] incandescent light bulbs you purchased or had in storage over the last 12 months have you *installed*? [INSERT BREAK]

If you cannot remember the exact number, please provide your best estimate.

[Numeric Open End, 0 up to 100]

[ASK L7 IF L4 > 0]

L7. Think about the sockets in your home that take a screw-in light bulb. Below we have provided a scale from 100% incandescent bulbs currently installed to 100% CFLs. Please indicate which point on the scale best represents the number of incandescent and/or CFL bulbs currently installed in your home. [INSERT BREAK] *Please provide your best estimate.*

100% Incandescent	76%-99% Incandescent	51-75% Incandescent	50% Incandescent/ 50% CFL	51-75% CFL	76%-99% CFL	100% CFL
○	○	○	○	○	○	○

PS0. Where do you typically buy light bulbs? [RANDOMIZE LIST, MULTIPLE SELECT]

1. Big box stores such as Wal-Mart or Target
2. Home improvement stores such as Home Depot or Lowes
3. Drug stores such as Walgreens or Longs
4. Supermarkets such as Safeway or Albertsons

Future Purchase Intent/Concern Regarding Energy Efficiency

Please rate the following statements regarding energy use in your home. [INSERT BREAK]

Please use a 1-7 scale where 1 means "Strongly Disagree" and 7 means "Strongly Agree." [RANDOMIZE LIST]

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
○	○	○	○	○	○	○

E1A. I am not very concerned about the amount of energy used in my home.

FP1A. The next time I purchase a light bulb it will be a CFL.

E1B. It is my right to use as much energy as I want, as long as I can pay for it.

FP1B. There is no doubt that I will purchase CFLs in the future.

E1C. Making energy-related improvements in my home is not a priority for me.

Concern Regarding Energy Efficiency/Future Purchase Intent/Perceived Behavioral Control

For this next section, we are again going to ask your thoughts about energy use. [INSERT BREAK]

Please use a 1-7 scale where 1 means "Strongly Disagree" and 7 means "Strongly Agree." [RANDOMIZE LIST]

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
○	○	○	○	○	○	○

E1D. The household consumer is such a small part of the whole energy consumption picture that it really doesn't matter how a household uses energy.

FP1C. The next time one of my light bulbs burns out, I will replace it with a CFL.

EIE. When looking to buy a product that uses energy, my household seeks out the most energy efficient product available.

BC1A. There is nothing that will stop me if I want to purchase CFLs for my household. [SKIP IF L1=4]

E2A. Scarce energy supplies will be a major problem in the future.

M2C. Please select number six. [Speed bump]

FP2. Approximately what percentage of your future light bulb purchases will be CFLs?

1. 100%
2. 75%
3. 50%
4. 25%
5. 0%

Price signal[34][35]

[SKIP IF L1=4]

PS1. Would you be willing to purchase a CFL priced at. . . [1=Yes, 2=No] [NOTE: PS1a-f SHOULD BE ON SEPARATE SCREENS]

A. $8.00 per bulb [IF =1, SKIP TO BC1C]
B. $6.00 per bulb [IF =1, SKIP TO BC1C]
C. $4.00 per bulb [IF =1, SKIP TO BC1C]
D. $2.00 per bulb [IF =1, SKIP TO BC1C]
E. $.99 per bulb [IF =1, SKIP TO BC1C]
F. $.20 per bulb.

Perceived Behavioral Control/Concern Regarding Energy Efficiency

How would you rate the following statements? [36] [INSERT BREAK]

---

[34] These will feed into the market effects study.

[35] The following question was removed from this section as it was not thought to be necessarily relevant to price signal: PS. Where do you typically buy light bulbs? (Check all that apply)

Big box stores

Home improvement stores

Drug stores

Supermarkets

[36] The following questions that were taken to indicate behavior (versus attitudes or beliefs) were removed: "When buying new appliances, I always seek out the most energy efficient product that will suit my needs"; "My household tends to buy standard bulbs *over* CFLs (describe and explain CFLs if necessary)"; "When looking for new appliances for my household, we always out seek out products that use the least amount of energy"; "I conserve energy because it is the right thing to do for the environment."

Please use a 1-7 scale where 1 means "Strongly Disagree" and 7 means "Strongly Agree." [RANDOMIZE LIST]

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
○	○	○	○	○	○	○

BC1C. Someone else in my household purchases light bulbs for the home.

E2B. Everyone should make a real effort to save energy.

BC1D. Generally speaking, no one cares if I want to install a CFL in one of our household's fixtures. [SKIP IF L1=4]

E2C. Instead of building new power plants, customers should use less electricity.

[SKIP IF L1=4]

BC2. How strongly do other members of your household object to buying CFLs?

Please use a scale of 1-7 where 1 means "Not at all" and 7 means "Very Strongly."

Not at all						Very Strongly
1	2	3	4	5	6	7
○	○	○	○	○	○	○

Product Barriers

[SKIP IF L1=4]

PB1. How would you rate the availability of CFLs in the stores you shop at? [INSERT BREAK]

Please use a 1-7 scale where 1 means "Very Poor" and 7 means "Very Good"

Very Poor						Very Good
1	2	3	4	5	6	7
○	○	○	○	○	○	○

[SKIP PB2 IF L1=4]

PB2. Please indicate the extent to which you agree/disagree with the following statements. [INSERT BREAK]

Please use a 1-7 scale where 1 means "Strongly Disagree" and 7 means "Strongly Agree." [RANDOMIZE LIST]

Strongly Disagree						Strongly Agree	Don't Know
1	2	3	4	5	6	7	0
○	○	○	○	○	○	○	○

A. CFLs last longer than incandescent light bulbs.
D. CFLs can take longer to turn on.

Product Barriers/Awareness of Consequences/Personal Norms Activated

Please indicate the extent to which you agree/disagree with the following statements. [INSERT BREAK]

Please use a 1-7 scale where 1 means "Strongly Disagree" and 7 means "Strongly Agree." [RANDOMIZE LIST]

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
○	○	○	○	○	○	○

M2D. Household electricity use has an impact on the environment.

PB3A. CFLs are not worth the extra cost. [SKIP IF L1=4]

PN1D. I feel guilty when I purchase things that use more electricity than necessary.

Product Barriers/Awareness of Consequences/Ascription of Responsibility to Self

Now we would like to ask you about global warming and energy. How would you rate the following statements? [INSERT BREAK]

Please use a 1-7 scale where 1 means "Strongly Disagree" and 7 means "Strongly Agree." [RANDOMIZE LIST]

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
○	○	○	○	○	○	○

PB3B. I am concerned about how to dispose of CFLs. [SKIP IF L1=4]

M2G. I believe that household energy use has an impact on global warming and climate change.

AR1A. I do NOT feel responsible for conserving energy because my personal contribution is very small.

M2H. I am very concerned about the effect on global warming that comes from burning coal and gas to generate electricity.

PB3D. My lighting needs are not met by CFLs. [SKIP IF L1=4]

Awareness of Consequences/Product Barriers/Personal Norms Activated/Ascription of Responsibility to Self

Again, please indicate the extent to which you agree/disagree with the following statements. [INSERT BREAK]

Please use a 1-7 scale where 1 means "Strongly Disagree" and 7 means "Strongly Agree." [RANDOMIZE LIST]

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
○	○	○	○	○	○	○

M2I. I believe that global warming is occurring.

PB3E. I find it difficult to install CFLs due to the limitations of my fixtures (the CFLs don't fit). [SKIP IF L1=4]

PN1A. I feel guilty if I use too much electricity.

AR1B. I do NOT feel a personal responsibility to reduce greenhouse gasses.

[SKIP F1-F2 if L1=4]

Friends/Family use of CFLs

F1. How many of your friends and family currently use CFLs in their home?

1. None of my friends and family
2. A few of my friends and family
3. About half of my friends and family
4. Most of my friends and family
5. All of my friends and family
6. I do not know

[SKIP F2 IF F1=1 OR 6]

F2. As far as you know, do they like them?

1. All or most do
2. Some do and some don't
3. No, they do not like them
4. I do not know if they like them or not

[ASK ALL]

F3. If you had to guess, how many of your friends or family members are likely to use CFLs in the future?

1. None of my friends and family
2. A few of my friends and family
3. About half of my friends and family
4. Most of my friends and family
5. All of my friends and family

6. I do not know

F3a. In the past 12 months, have any of your friends or family members encouraged you to purchase CFLs?

1. Yes
2. No
3. Don't know/Do not recall

F4. How much does your household pay attention to your utility bills to track the amount of electricity you are using?

1. A lot – I/we look at them in detail each month
2. Some – I/we usually look at them
3. A little –I/we will look at them once in a while
4. None – I/we do not pay any attention to our utility bills

Product Barriers/Personal Norms Activated/Awareness of Consequences

We would like to ask you a few more questions regarding CFLs and electricity usage. [INSERT BREAK]

Please use a 1-7 scale where 1 means "Strongly Disagree" and 7 means "Strongly Agree." [RANDOMIZE LIST]

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
○	○	○	○	○	○	○

PB3F. I just do not like CFLs. [SKIP IF L1=4]

PN1B. I would feel bad about myself if I did not actively try to reduce my electricity consumption.

PB3G. As far as I am aware, using CFLs instead of incandescent light bulbs will not save more money. [SKIP IF L1=4]

M2F. Conserving electricity will help reduce global warming.

PB3C. Please select number three for this response. [Speed bump]

Participation in IOU programs

IU1. Electric and gas utilities often have many programs for their customers to participate in. [1=YES, 2=No]

A. Have you ever received a rebate from your utility?
B. Have you ever received a discount from your utility?

IU2. Have you ever received a free CFL through a giveaway program?

1. Yes
2. No

[ASK IF IU2=1]

IU3. Did you receive this free CFL in the last 12 months?

1. Yes
2. No

IU4. To the best of your knowledge, have you purchased a CFL in the last 12 months with the name of your local utility on the box (or on a sticker attached to the box)?

1. Yes
2. No

Concern Regarding Global Warming

GW1. Please indicate how frequently you do any of the following: *Please use a 1-7 scale where 1 means "Never" and 7 means "Very Frequently."* [RANDOMIZE LIST]

Never			Sometimes			Very Frequently
1	2	3	4	5	6	7
○	○	○	○	○	○	○

A. Seek out information on global warming.

B. Make a point of "paying attention" to media coverage or information on global warming when you are exposed to it.

Mid-point Note to Respondent:

'You have completed approximately ½ of the questionnaire. Your careful responses are very important to us. Please take your time and thoughtfully respond to the second half of this survey."

Exposure to other sources of information

I1a. Have you heard of any of the following? [ROTATE, 1=Yes, 2=No, 3=Don't know]

b. Click It or Ticket

d. Flex Your Power

e. Flex Alert

f. Energy Hog

h. Energy Star

i. Change a Light, Change the World

I1. Please indicate if you have seen or heard information on global warming or energy conservation in any of the following: (1=Yes, 2=No, 3=Don't Know)

A. Documentaries and/or movies

B. Television news shows
C. Other types of TV shows
D. Talk radio
E. News radio

[SKIP I2 IF ALL I1A-E = 2 or 3]

I2. How much exposure have you had to this type of programming in the last year? Please use a scale of 1 to 7 where 1 means "very little exposure" and 7 means "a lot of exposure." When we say "very little exposure" we mean that you have seen, heard, or read the advertisements once before but cannot recall much more than that. When we say "a lot of exposure" we mean that you have seen, heard, or read the advertisements many times and can readily recall or describe the ads.

Very Little Exposure						A Lot of Exposure
1	2	3	4	5	6	7

Trust in EE Information and Claims

T1. How much do you trust the following? [INSERT BREAK]

Please use a 1-7 scale where 1 means "do not trust at all" and 7 means "completely trust." [RANDOMIZE LIST]

Do Not Trust At All						Completely Trust
1	2	3	4	5	6	7

A. Information about products that claim to save energy.
B. Information about global warming or other environmental damage.

T2. How much do you trust information about global warming or other environmental damage from the following sources?

Please use a 1-7 scale where 1 means "do not trust at all" and 7 means "completely trust."

B. Scientists

C. Environmentalists

Utility

UA1. Who is your ELECTRIC utility?

1. Southern California Edison
2. Pacific Gas and Electric
3. San Diego Gas and Electric
00. Other. Specify
98. Don't Know

[SKIP TO FY1 IF UA1=98]

Utility Messages

[SKIP TO UM1c IF UA1 = 3 or 00]

"Now, we are going to show you a series of advertisements by your utility. Please indicate if you have seen these advertisements."[Place this statement on a separate page]

[USE SEPARATE PAGES FOR EACH ADVERTISMENT Block]

[SHOW IF UA1 = 1]

UM1a

SCE Shot 1

SCE Shot 2

[SHOW IF UA1 = 2]

UM1b

PGE Shot 1

UM1a & UM1b. Have you seen these advertisements or any other advertisements from an electric utility (e.g. LADWP, SMUD) promoting energy efficiency in the last year?

1. Yes
2. I think so
3. No
4. I could not view the advertisements

[ASK IF UA1 = 3 OR 00]

UM1c. Have you seen any advertisements promoting energy efficiency from any electric utility (e.g. SDG&E, LADWP, SMUD, SoCal Edison, SCE, PG&E) in the last year?

1. Yes
2. I think so
3. No

["Exposed to utility messaging" = IF (UM1a, UM1b or UM1c = 1 or 2) THEN 1, OTHERWISE 0]

[SKIP TO FY1 IF Exposed to utility messaging=0]

UM2. How much exposure have you had to these advertisements in the last year? Please use a scale of 1 to 7 where 1 means "very little exposure" and 7 means "a lot of exposure." When we say "very little exposure" we mean that you have seen, heard, or read the advertisements once before but cannot recall much more than that. When we say "a lot of exposure" we mean that you have seen, heard, or read the advertisements many times and can readily recall or describe the ads.

Very Little Exposure						A Lot of Exposure
1	2	3	4	5	6	7
○	○	○	○	○	○	○

UM3. Thinking about these advertisements, about how many times have you seen these advertisements?

1. 1 or 2 times
2. 3 – 9 times

3. 10 or more times

UM4. For the next two questions, please answer thinking about yourself and your own, personal attitudes towards the advertisements. [Place UM4a and UM4b on the same page]

A. How motivating would you say these advertisements are?

Please use a scale of 1-7 where 1 means "Not at all motivating" and 7 means "Very motivating."

Not at All Motivating						Very Motivating
1	2	3	4	5	6	7
○	○	○	○	○	○	○

B. How powerful would you say these advertisements are?

Please use a scale of 1-7 where 1 means "Not at all powerful" and 7 means "Very powerful."

Not at All Powerful						Very Powerful
1	2	3	4	5	6	7
○	○	○	○	○	○	○

[ASK IF L2=1]
UM5. Did the advertisements influence your decision to purchase CFLs?

1. Yes
2. No

FYP Global Warming Messages

FY1. Have you ever seen or heard advertisements regarding global warming or energy conservation in the newspaper, on television or on the radio? (1=Yes, 2=No, 3=Don't Know) [USE ONE PAGE PER DESCRIPTION]

[FOR FY1a-d: ROTATE, 1=Yes, 2=No, 3=Don't Know]

[Have you ever seen or heard…]

A. A series of advertisements from your local utility with the tagline "**Save Money, Save Energy, Save the Environment**"?

[Have you ever seen or heard…]

B. Advertisements saying that household energy use is a major contributor to global warming and that each of us can make a difference by taking simple steps to reduce energy use at home. The print advertisements feature close-up images of children or animals and the radio advertisements discuss the impact of global warming on children. Both use taglines like **"Can changing your thermostat change the climate?" or "Can changing your furnace change their future?"**

[Have you ever seen or heard …]

C. Advertisements featuring children and their parents or grandparents talking about leaving behind a California with droughts, floods, and excessive heat. The advertisements feature the parent or grandparent promising to reduce the impact of global warming in the future for their children and grandchildren. All ads feature the tagline "**Global Warming is a Choice**" and use examples like "**If every California household chose to replace five regular lights with energy efficient light bulbs, it would be like taking 400,000 cars off the road**"?

[Have you ever seen or heard …]

D. Advertisements featuring children and adults that are either the child's parent, teacher, or a firefighter talking about leaving behind a California with droughts, floods, and excessive heat. The advertisements feature the adult talking about the reasons why they take action to slow or stop global warming. All ads feature a tagline like **"The fight against global warming has begun"** and **"last year Californians installed 400,000 energy efficient cooling systems?"**

"Now, we are going to show you a series of advertisements which are part of the Flex Your Power Campaign. Please indicate if you have seen these advertisements."[Place this statement on a separate page]

[USE SEPARATE PAGES FOR EACH ADVERTISMENT Block]

Legacy Billboard Image #1, big enough to read the tagline

Legacy Screen Shots A and B side by side

2008 Billboard Lemonade and Girl Scout

2008 Screen shots A, B, and C side by side

FY2. Have you seen any of these advertisements or other Flex Your Power advertisements in the last year?

1. Yes
2. I think so
3. No
4. I could not view the advertisements

["Exposed to FYP ad campaign" = IF(FY2 = 1 or 2) THEN 1, OTHERWISE 0]

[SKIP TO OA1 IF Exposed to FYP ad campaign=0]

FY5. How much exposure have you had to these advertisements in the last year? Please use a scale of 1 to 7 where 1 means "very little exposure" and 7 means "A lot of exposure." When we say "very little exposure" we mean that you have seen, heard, or read the advertisements once before but cannot recall much more than that. When we say "a lot of exposure" we mean that you have seen, heard, or read the advertisements many times and can readily recall or describe the ads.

Very Little Exposure						A Lot of Exposure
1	2	3	4	5	6	7
○	○	○	○	○	○	○

FY6. Please think about all the Flex Your Power advertisements shown to you here. About how many times have you seen these advertisements?

1. 1 or 2 times
2. 3 – 9 times
3. 10 or more times

FY7. For the next two questions, please answer thinking about yourself and your own, personal attitudes towards the advertisements. [Place FY7a and FY7b on the same page]

A. How motivating would you say these advertisements are?

Please use a scale of 1-7 where 1 means "Not at all motivating" and 7 means "Very motivating."

Not at All Motivating						Very Motivating
1	2	3	4	5	6	7
○	○	○	○	○	○	○

B. How powerful would you say these advertisements are?

Please use a scale of 1-7 where 1 means "Not at all powerful" and 7 means "Very powerful."

Not at All Powerful						Very Powerful
1	2	3	4	5	6	7
○	○	○	○	○	○	○

[ASK IF L2=1]
FY8. Did the advertisements influence your decision to purchase CFLs?

1. Yes
2. No

Called 800 # or went to website

CH1. After seeing these advertisements, did you… (1=Yes, 2=No)

A. Call the 800 number shown on the Flex Your Power ads?
B. Visit the website shown on the Flex Your Power ads?

Other Messaging

"Now, we are going to show you a series of advertisements. Please indicate if you have seen these advertisements."[Place this statement on a separate page]

[USE SEPARATE PAGES FOR EACH ADVERTISMENT Block]

Wal-Mart CFL Screenshot 1

Wal-Mart CFL Screenshot 2

We Can Solve It Screenshot

EDF Screenshot 1

EDF Screenshot 2

Home Depot Eco Options Screenshot 1

Home Depot Eco Options Screenshot 2

OA1. Have you seen any of these advertisements or other advertisements promoting energy efficiency by retailers (e.g. Walmart, Home Depot) or non-profit organizations (e.g. World Wildlife Fund, NRDC) in the last year?

1. Yes
2. I think so
3. No
4. I could not view the advertisements

["Exposed to other messaging" = IF (OA1 = 1 or 2) THEN 1, OTHERWISE 0]

[SKIP TO OS1 IF Exposed to other messaging=0]

OA2. How much exposure have you had to these advertisements in the last year? Please use a scale of 1 to 7 where 1 means "very little exposure" and 7 means "a lot of exposure." When we say "very little exposure" we mean that you have seen, heard, or read the advertisements once before but cannot recall much more than that. When we say "a lot of exposure" we mean that you have seen, heard, or read the advertisements many times and can readily recall or describe the ads.

Very Little Exposure						A Lot of Exposure
1	2	3	4	5	6	7
○	○	○	○	○	○	○

OA3. Thinking about all of these advertisements, about how many times have you seen these advertisements?

1. 1 or 2 times
2. 3 – 9 times
3. 10 or more times

OA4. For the next two questions, please answer thinking about yourself and your own, personal attitudes towards the advertisements. [Place OA4a and OA4b on the same page]

B. How motivating would you say these advertisements are?
Please use a scale of 1-7 where 1 means "Not at all motivating" and 7 means "Very motivating."

Not at All Motivating						Very Motivating
1	2	3	4	5	6	7
○	○	○	○	○	○	○

C. How powerful would you say these advertisements are?
Please use a scale of 1-7 where 1 means "Not at all powerful" and 7 means "Very powerful."

Not at All Powerful						Very Powerful
1	2	3	4	5	6	7
○	○	○	○	○	○	○

[ASK IF L2=1]
OA5. Did the advertisements influence your decision to purchase CFLs?

1. Yes
2. No

Orientation towards Savings

OS1 How would you rate the following statements regarding your shopping behavior?

[INSERT BREAK] [RANDOMIZE LIST]

Please use a scale of 1-7 where 1 means "Strongly Disagree" and 7 means "Strongly Agree."

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
○	○	○	○	○	○	○

A. I compare prices of at least a few brands before I choose one.
B. I find myself checking the prices even for small items.
C. It is important for me to get the best price for the products I buy.[37]
D. Generally speaking, the higher the price of a product, the higher the quality.
E. The old saying "you get what you pay for" is generally true.
F. The price of a product is a good indicator of its quality.
G. You always have to pay a bit more for the best. [38]

Demographics[39]

"We're almost finished. We just have a few questions about your household to make sure we're getting a representative sample of utility residents."

X6. Which of the following best describes your age?

01. Less than 18 years old
02. 18 or 19 years old
03. 20-24 years old[40]
04. 25-34 years old
05. 35-44 years old
06. 45-54 years old
07. 55-64 years old
08. 65 or older

X8. What is the highest level of education you have completed?

1. No schooling [DON'T SHOW]
2. Less than high school
3. Some high school

[37] These three scale items were developed by Darden and Perreault (1976). Recent studies by Allawdi, Neslin, and Gedenk (2001) indicate that scales have a composit reliability of .826.

[38] This scale was developed by Lichtenstein, Ridgeway, and Netemeyer (1993). Test showed an Alpha for the scale of .78.

[39] X1 in the intro (on renters/owners) is part of the standard demographic battery

[40] We changed some of these categories to match the categories of the data tables on the American FactFinder website for the 2006 American Community Survey.

4. High school graduate or equivalent (e.g., GED)
5. Some college, no degree
6. College graduate degree
7. Graduate or professional degree
00. Other, Specify

[ALLOW TO SKIP. IF SKIP MARK AS 99. REFUSED]

X9. Which of the following best represents your annual household income from all sources in 2007, before taxes? Was it . . . .

1. Less than $25,000[41]
2. $25,000-34,999
3. $35,000-49,999
4. $50,000-74,999
5. $75,000-99,999
6. $100,000-149,999
7. $150,000-199,999
8. $200,000 or more

[ALLOW TO SKIP. IF SKIP MARK AS 9. REFUSED]

X9A. Are you of Hispanic, Latino, or Spanish origin?

1. Yes
2. No

[ALLOW TO SKIP. IF SKIP MARK AS 3. REFUSED]

X10. What is your ethnicity?[42] [MULTIPLE RESPONSE, ALLOW UP TO 5 RESPONSES]

1. White
2. Black or African American
3. American Indian or Alaska Native
4. Asian Indian
5. Chinese
6. Japanese
7. Korean
8. Vietnamese
9. Filipino
10. Other Asian

[41] We changed the "less than $20,000" category to be "less than $25,000" to match the categories of the data tables on the American FactFinder website for the 2006 American Community Survey.

[42] Changed from "race" to "ethnicity"

11. Native Hawaiian
12. Guamanian or Chamorro
13. Samoan
14. Other Pacific Islander
00. Other, Specify

[ALLOW TO SKIP. IF SKIP MARK AS 99. REFUSED]

Political Orientation (this falls under Personal Barriers)

PO1a. In terms of politics, would you say that you are …?[43]

1. Very liberal
2. Somewhat liberal
3. Moderate
4. Somewhat conservative
5. Very conservative

[ALLOW TO SKIP. IF SKIP MARK AS 6. REFUSED]

PO2. What is your political party affiliation? Please select one.[44]

1. Strong Republican
2. Moderate Republican
3. Leans Republican
4. Independent/Other
5. Leans Democrat
6. Moderate Democrat
7. Strong Democrat
8. Don't Know

[ALLOW TO SKIP. IF SKIP MARK AS 9. REFUSED]

[43] Included to match political polls

[44] Included to match IMMI.

ATTACHMENT 4 – SEM FOCUS GROUP SCREENER

Q1. On a scale of one to seven, with one being strongly disagree and seven being strongly agree, how do you rate the following statements:

1. I am too busy to be worried about making energy-efficient improvements in my home.
2. I am very concerned that there will not be enough energy to go around in the near future.
3. Instead of building new power plants, consumers should use less energy.
4. In order to preserve the environment, my household must use less energy.
5. Conserving energy in my home is an economic necessity.
6. There is little more I can do to save energy.
7. I conserve energy because it is the right thing to do.
8. When it comes to energy, I try to use only my fair share.
9. When buying new appliances, I always seek out the most energy efficient product that will suit my needs.
10. Conserving energy is necessary to prevent brown and black outs.

Q2. Which of the following statements best summarizes your feelings on global warming?

1. Global warming is a critical issue demanding immediate attention
2. Global warming is important, but we can act with deliberation
3. Global warming is somewhat important
4. Global warming is not at all important

Q3. Please list all the advertisements you advertisements you recall seeing over the past year that focus on energy efficiency or global warming?

Source of Ad (if known)	Description of Ad

B. RESIDENTIAL PRE- POST- AND COMPARISON GROUP TRACKING SURVEY

B.1 Detailed Program Findings Memo

MEMORANDUM

TO: CPUC (for utility and implementer comment)

FROM:Opinion Dynamics Evaluation Team

DATE: June 2009

RE: Preliminary General Residential Tracking Survey Findings (Three Waves)

Opinion Dynamics is in the process of analyzing data from the first year of a tracking survey that looks at changes in energy saving awareness, knowledge, and behaviors in the residential market. The tracking survey was fielded in June 2008, October 2008, and February 2009. We will incorporate the findings from the tracking survey into the final 2009 Flex Your Power (FYP) indirect impact evaluation report.

In the interim, this memo is intended to provide brief feedback on the emerging trends from the CA General Residential and CA Spanish-speaking Tracking Surveys that speak to the potential influence of the Flex Your Power SWM&O Campaigns on energy consumption behavior. In this memo, we highlight areas where we found statistically significant changes in the population immediately after the Flex Your Power Summer '08 Mass Media Campaign was implemented across the state, and then again a few months later in February 2009.

Data for this analysis were collected just before the Summer '08 Campaign - with a survey fielded in June 2008, immediately after the Campaign - with a survey fielded in October 2008, and a few months after the Campaign – with a survey fielded in February 2009. To the best of our knowledge, there were no mass media efforts by Flex Your Power between the second and third fielding of our survey. For each time period, we interviewed 400 Californians in English and 400 in Spanish. In addition, we interviewed 200 Arizona residents and 200 Oregon residents in each time period to serve as comparison groups for the CA English/General Population survey. Further, we interviewed 200 Spanish-speaking Arizona residents in each time period to serve as a comparison group for the CA Spanish survey.

This tracking study uses a quasi-experimental approach to determine Campaign impact; that is we looked both at differences in the CA population over time and in relation to comparison groups. Statistically significant differences over time and among comparison groups were determined by comparing percentages (z-tests) and means (t-tests) at a 90% confidence interval. Notably, we looked at several alternative analytical approaches to assess impact. The outcome of these other analytical methods and our reasoning for ultimately selecting the z-test and t-test method will be provided in full detail in the final report.

This study measured a multitude of energy saving awareness, knowledge, and behavior indicators. While the FYP Campaign promotes energy efficiency and conservation, many other organizations also promote saving energy both inside California and outside of California. Therefore, we used a quantitative approach to determine changes that were likely influenced by the Flex Your Power[1] messaging. The logic used to determine FYP impacts is provided in detail in Appendix A. In summary, this study defined a FYP impact by:

- A statistical difference in the CA data across time and a statistical difference between CA and both comparison groups[2]; or
- A statistical difference in the CA data across time, only when comparison groups were not asked a particular question (e.g. awareness of Flex Your Power).

Using this approach, we analyzed the data for immediate impacts, delayed impacts or prolonged impacts. These terms are defined below:

> **Immediate Impact** = A Campaign impact seen immediately after the Summer '08 Campaign
>
> **Prolonged Impact** = A Campaign impact seen immediately after the Summer '08 Campaign and three months afterward
>
> **Delayed Impact** = An instance where we have no evidence to support an immediate effect of the Summer '08 Campaign, but there is evidence to support that an effect may have occurred three months after the Campaign aired.

Some changes in the data over time could be attributable to FYP using this approach. However, in some cases we could not decipher whether these changes were in fact influenced by FYP versus other outside influences. When this occurred, we qualitatively assessed the data and noticed some positive trends that point both to a possible effect of FYP and potentially to other outside influences. For example, one indicator may have increased significantly after the Summer '08 Campaign in California but may have also increased in one or both of the comparison groups indicating that something other than FYP may be contributing to the increase. In a similar fashion to the impacts, we categorized these trends as immediate positive trends, delayed positive trends, or prolonged positive trends however we cannot definitely say whether these trends were caused by FYP.

In this memo, we provide impact and trend information discovered in both the CA general residential and Spanish-speaking populations. Several key behavior indicators were tracked in this study that align with the Campaign's content[3]. We begin this memo with the general residential population findings, showing a summary table of the key indicators that were likely affected at least in part by the Campaign. We then show a table of the key indicators that may have been affected by the Campaign and/or other outside influences. We then support these summary tables with graphs and explanatory text for each of the key

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[1] Throughout this report the terms "effect" and "impact" are used interchangeably.

[2] The logic looks at both comparison groups for the General Population data. Given that we only had one comparison group for the Spanish-speaking data, the logic only looks at one comparison group for the Spanish-speaking data.

[3] Several other behavior indicators were tracked in this study but were not widely promoted by the SWM&O programs. These other indicators are summarized and analyzed in Appendix B of this report.

indicators where we found an impact or trend. We follow a similar format for presenting the Spanish-speaking population findings after the presentation of the complete general residential population findings.

CA General English-Speaking Population

Table 1: General Population: Key Indicators Likely Affected by the FYP Summer '08 Campaign[4]

Key Indicators		Immediate Effect of Summer '08 Campaign	Effect of Summer '08 Campaign 3 months afterward	Conclusion
Awareness & Knowledge	Awareness of Flex Your Power	⬆	Prolonged Effect	The Campaign had an immediate and prolonged effect on the population's awareness of FYP; awareness increased significantly after the Campaign and remained at that level three months afterward.
	Energy Efficiency Knowledge	⬆	Prolonged Effect	The Campaign had an immediate and prolonged effect on the population's energy efficiency knowledge; knowledge increased after the Campaign and remained at that level three months afterward. At the same time, people in other states either had no changes in their knowledge or showed a decrease.
	Energy Conservation Knowledge	⬆	Prolonged Effect	The Campaign had an immediate and prolonged effect on the population's energy conservation knowledge; knowledge significantly increased after the Campaign and remained at that level three months afterward. At the same time, people's knowledge in other states decreased.
Exposure	Exposure to energy efficiency messaging	⬆	Prolonged Effect	The effect of the Campaign on the population's exposure to energy efficiency messaging was immediate and prolonged. Reported exposure to mass media energy efficiency messaging significantly increased immediately after the Campaign and again three months later. Further, CA claimed significantly more exposure to EE messaging than both comparison groups immediately after the Campaign and three months later.

[4] An arrow in this table indicates a significant increase in the data compared to Time Period 1 calculated at the 90/10 confidence level.

Table 2: General Population: Key Indicators Showing Trends with Uncertain Causes[5]

Key Indicators		Immediate Effect of Summer '08 Campaign	Effect of Summer '08 Campaign 3 months afterward	Conclusion
Awareness & Knowledge	Awareness of FYP website	Immediate Positive Trend	Delayed Effect	The immediate effect of the Campaign on awareness of the FYP website was positive; awareness slightly increased but it was not a statistically significant increase. Three months after the Campaign, awareness increased slightly more, reaching a level significantly higher than before the Campaign. It is uncertain why the Campaign would have this delayed effect.
Actions Taken	Percent of bulb purchasers that selected CFLs	Immediate Positive Trend	No Impact	The Campaign showed a positive influence on the population's light bulb purchase decision; the percent of light bulb purchasers that selected CFLs increased significantly after the Campaign while the comparison group purchasers were consistent between the two time points. However this effect was not prolonged given that three months later, fewer CA bulb purchasers were selecting CFLs than before the Campaign. In addition, the percentage of CFL purchasers was not statistically different from both comparison groups in any time period.
	Turning off lights	Immediate Positive Trend	No Impact	The Campaign showed a positive influence on encouraging more people to turn off the lights before leaving a room; more people stated that they do this immediately after the Campaign than before it. Three months later, the CA percentage dropped to parity with the pre-Campaign results. However, it is uncertain if the increase was due to the Campaign because the changes over time were not significantly different from both comparison groups.
Action Intent	Intent to purchase energy efficient appliances	Immediate Positive Trend	Prolonged Positive Trend	The data points to a positive trend showing a significant increase in the CA population's intent to purchase energy efficient appliances in the future both immediately after the Campaign and three months afterward. However, it is uncertain if the increase was due to the Campaign because the changes over time were not significantly different from both comparison groups.

[5] An arrow in this table indicates a significant increase in the data compared to Time Period 1 calculated at the 90/10 confidence level.

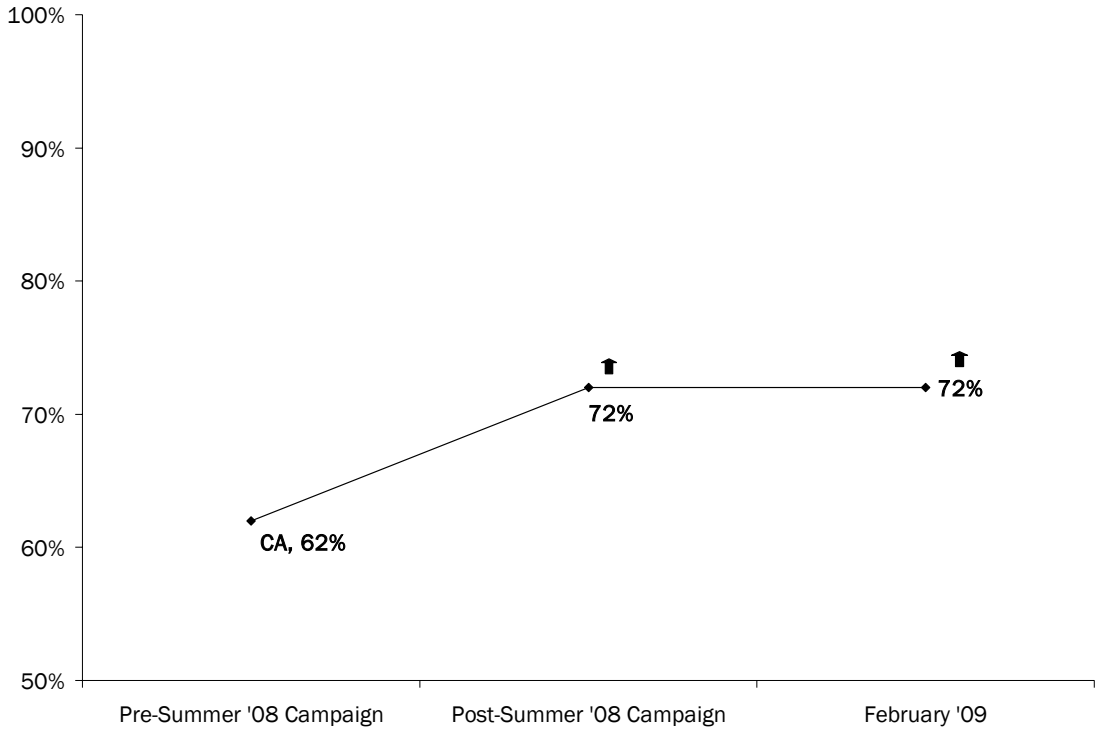
Key Indicators		Immediate Effect of Summer '08 Campaign	Effect of Summer '08 Campaign 3 months afterward	Conclusion
	Intent to purchase CFLs	Immediate Positive Trend	No Impact	The data show an immediate positive trend given that the percentage who intends to purchase CFLs significantly increased immediately after the Campaign; however one comparison group also increased while the other remained consistent. The Campaign does not appear to have had a delayed or prolonged effect on intent as the population and the comparison groups in time period three were consistent with pre- Campaign results.
Actions Taken	Percent of appliance purchasers that selected energy efficient appliances	No Impact	Delayed Positive Trend	The Campaign did not appear to have had an immediate effect on the population's appliance purchase decision; the percentage of appliance purchasers that selected an energy efficient model did not change immediately after the Campaign. The percentage of CA selecting energy efficient models did significantly increase three months after the Campaign; however, one comparison group also increased indicating that something outside of the FYP Campaign may be contributing to the increase.
EE Perceptions	Concern with amount of energy used in the home	No Impact	Delayed Positive Trend	It appears that the Campaign may have had a delayed effect on the population's concern for the amount of energy used in their homes. Concern did not immediately change after the Campaign, but it did increase three months after the Campaign and at that point was significantly different from both comparison groups. While the delayed impact is present quantitatively, it is uncertain whether the FYP Campaign directly contributed to this delayed effect.
	Perception that the household consumer is not a small part of the whole energy consumption picture	No Impact	Delayed Positive Trend	It appears that the Campaign may have had a delayed effect on the population's perception that the household consumer is not a small part of the energy consumption picture. The perception did not immediately change after the Campaign, but it did increase three months after the Campaign while one comparison group remained consistent across time periods and another showed volatile results.

Below we provide some detailed information for the General Population findings. First, we show the indicators where we found impacts that are likely due to the FYP Campaign. Second, we show the indicators where we found positive trends but are uncertain as to whether the FYP Campaign contributed to those trends. Lastly, we summarize the indicators where we found no signs of potential Campaign impacts.

Key Indicators Likely Affected by the FYP Summer '08 Campaign [6]

We asked Californians (but not those in other states) whether or not they had heard of "Flex Your Power.[7]" Figure 1 below shows an increase in Californians' awareness of the FYP brand name over time. The Campaign appears to have had an immediate and prolonged effect on the population's awareness of FYP. Awareness of FYP significantly increased by 10% after the Campaign and remained at that level three months afterward.

Figure 1. General Pop: % Aware of Flex Your Power

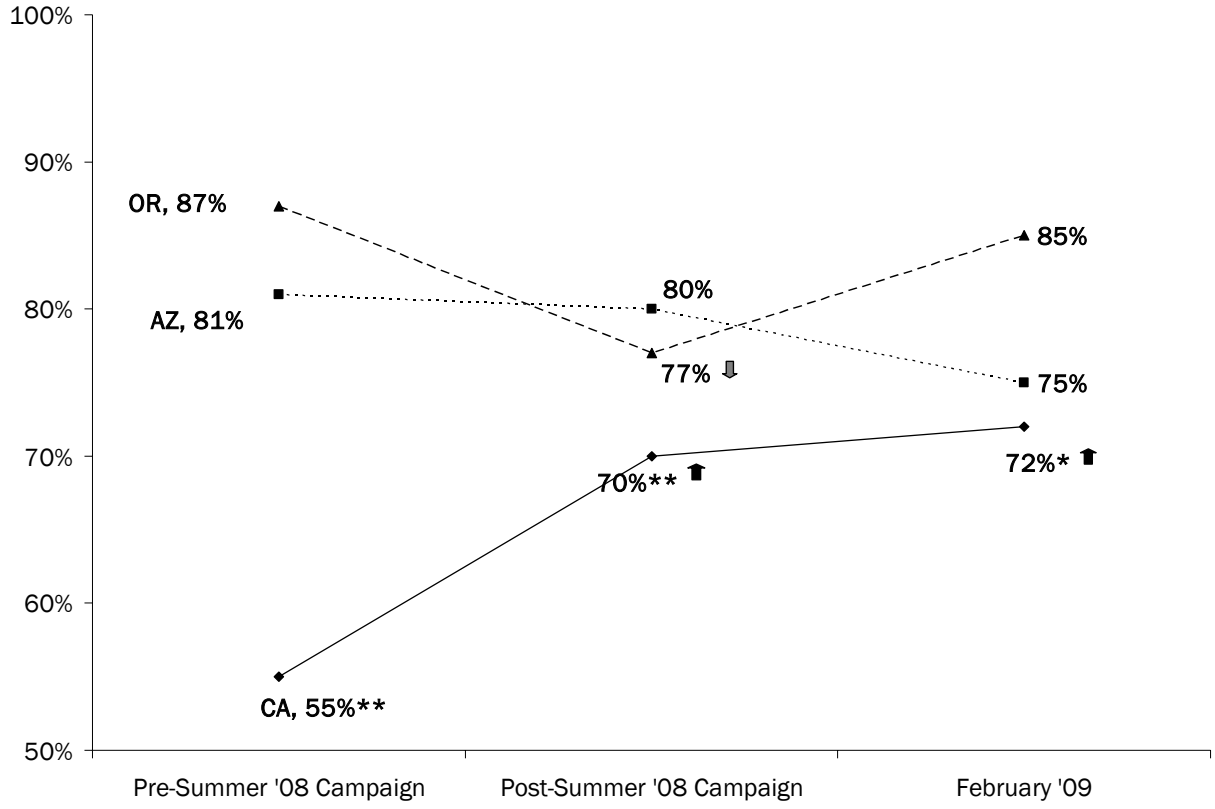


[6] Throughout this report we compared the data between CA and the comparison groups and across time periods to analyze differences in the population at the 90% confidence interval. In each graph or table, we use one asterisk, *, to indicate a difference between CA and one comparison group and two asterisks, **, to indicate a difference between CA and both comparison groups. Block arrows in each graph or table indicate a statistically significant increase or decrease in the data when compared to the data collected prior to the Summer '08 Campaign.

[7] Error from affirmative response bias was mitigated by including non-existent programs on the list as well as rotating the order of the items across respondents.

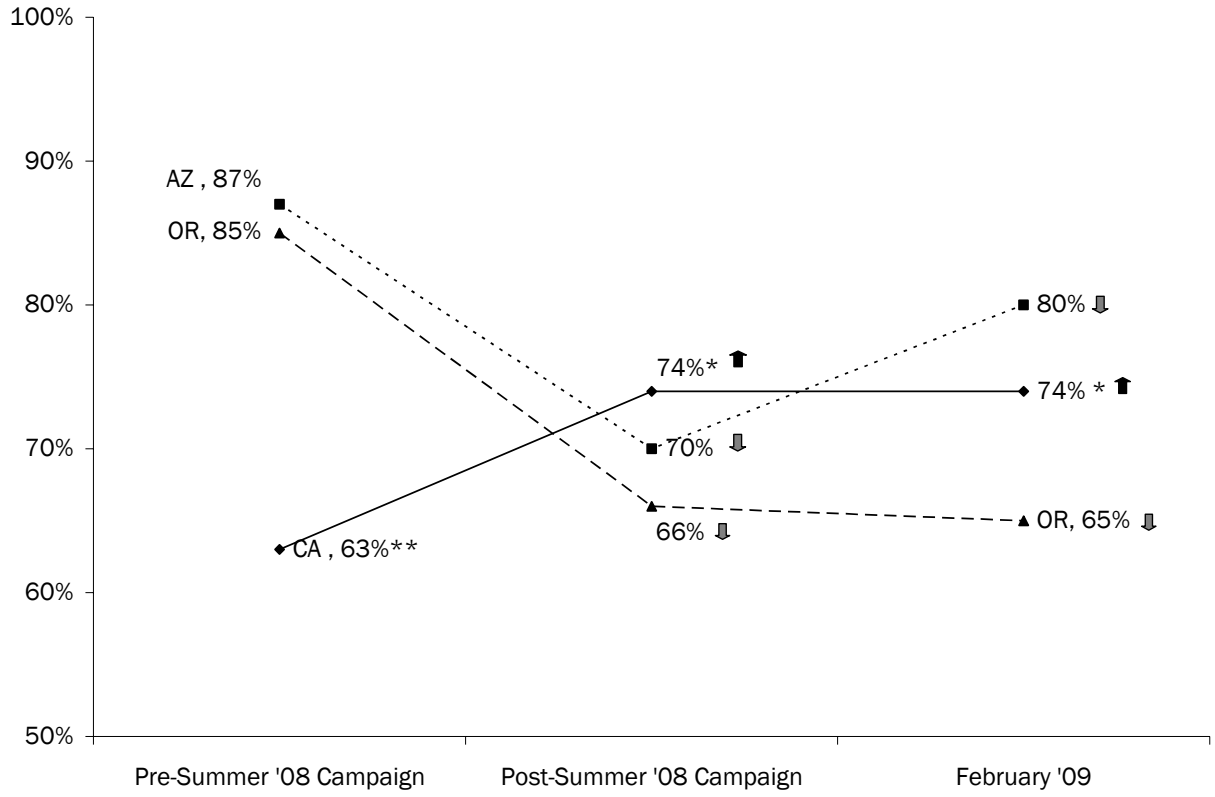
We asked Californians, as well as those in comparison states, to list three improvements a person might make to lower a home energy bill. We coded the responses into energy efficiency versus energy conservation categories. We then analyzed the number of respondents who were able to state an energy efficient or conservation improvement over time. Figure 2 below reflects evidence for the effect of the FYP Campaign on energy efficiency knowledge. The Campaign had an immediate and prolonged effect on the population's knowledge of ways to save energy the home; energy efficiency knowledge increased by 15% right after the Campaign and remained at that level three months afterward showing that the population obtained and retained energy efficiency knowledge in this time period. At the same time, people in other states either had no changes in their ability to state improvements (AZ) or showed a decrease and then returned to the baseline level (OR). While the comparison states actually were higher than California in their knowledge, it is the change across time that is considered here.

Figure 2. General Pop: Knowledge of Ways to Save Energy
(% that could provide at least one unaided energy efficiency response)



The Campaign also had an impact on energy conservation knowledge. Energy conservation knowledge increased significantly by 11% right after the Campaign and remained at that level three months afterward showing, again, that the population obtained and retained energy efficiency knowledge in this time period. At the same time, people's knowledge of energy conservation decreased in other states. Furthermore, more people in the comparison states reported conservation than CA before the Campaign, but California's knowledge caught up with one comparison group and surpassed another three months after the Campaign.

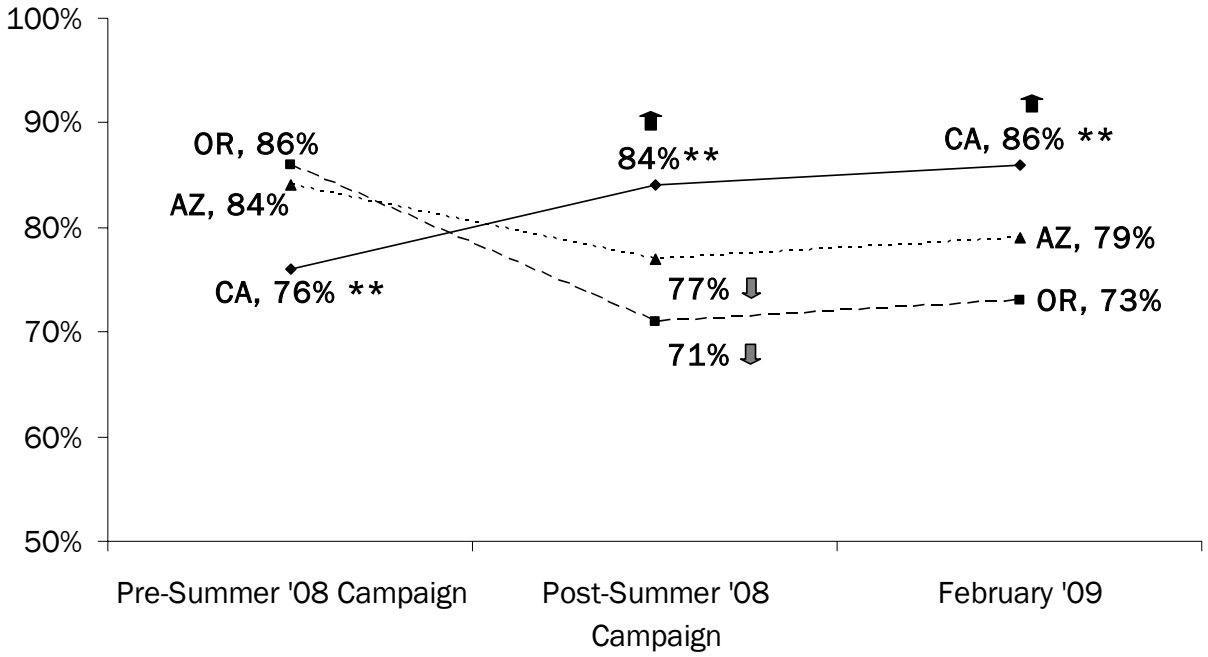
Figure 3. General Pop: Knowledge of Ways to Save Energy
(% that could provide at least one unaided energy conservation response)



Notably, we are still analyzing the knowledge data in relation to the energy efficiency and energy conservation behaviors that were promoted in the FYP '08 Summer Campaign and plan to provide these findings in the final report.

We asked respondents whether they were exposed to any energy efficiency messaging in the three months leading up to each survey period. As shown in the Figure below, messaging exposure increased by 8% when the FYP summer Campaign was implemented. This increased exposure was likely due in part to the additional FYP messaging in the CA marketplace, especially given that the comparison groups' exposure to EE messaging decreased during this time. Further, CA claimed more exposure to energy efficiency messaging than both comparison groups immediately after the Campaign and again three months later indicating that the additional FYP messaging may have contributed to this increased exposure. Although no FYP mass media messaging was in circulation between the summer Campaign and February 2009, it is likely that Californians recalled FYP and other messaging from the prior time period and may have been sensitive to the other efficiency-related mass media messages in the market place during this period.

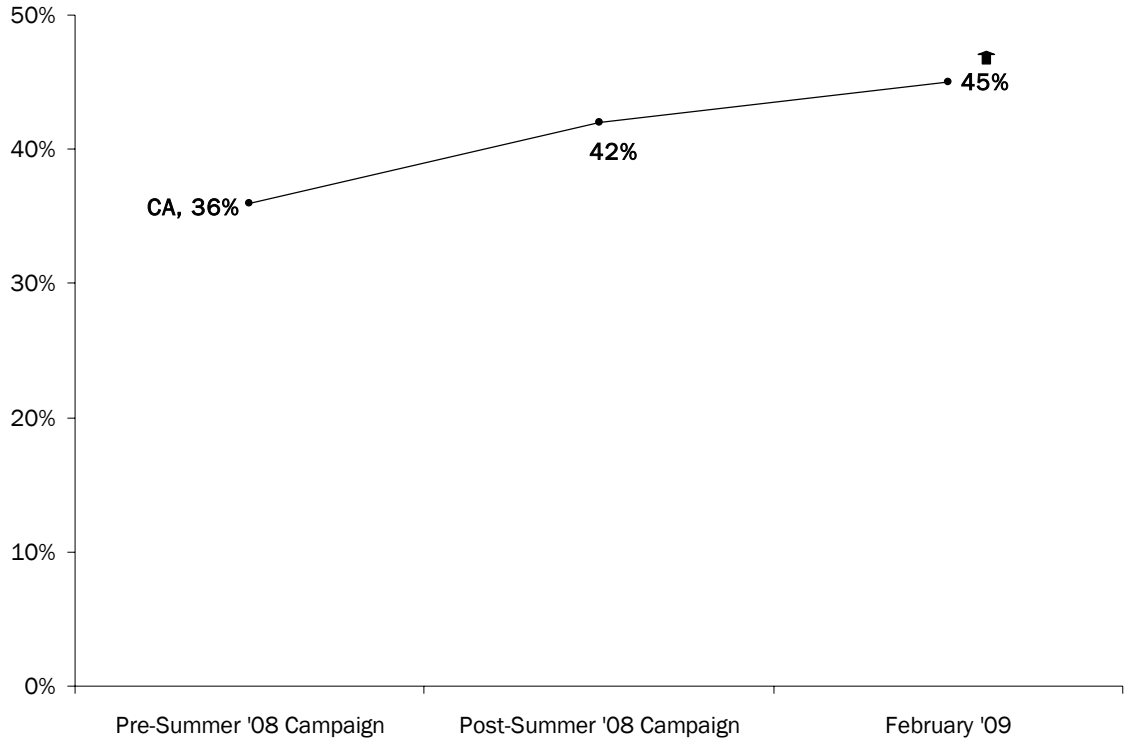
Figure 4. General Pop: % Self-Claimed Exposure to Energy Efficiency Messaging



Key Indicators Showing Trends with Uncertain Causes

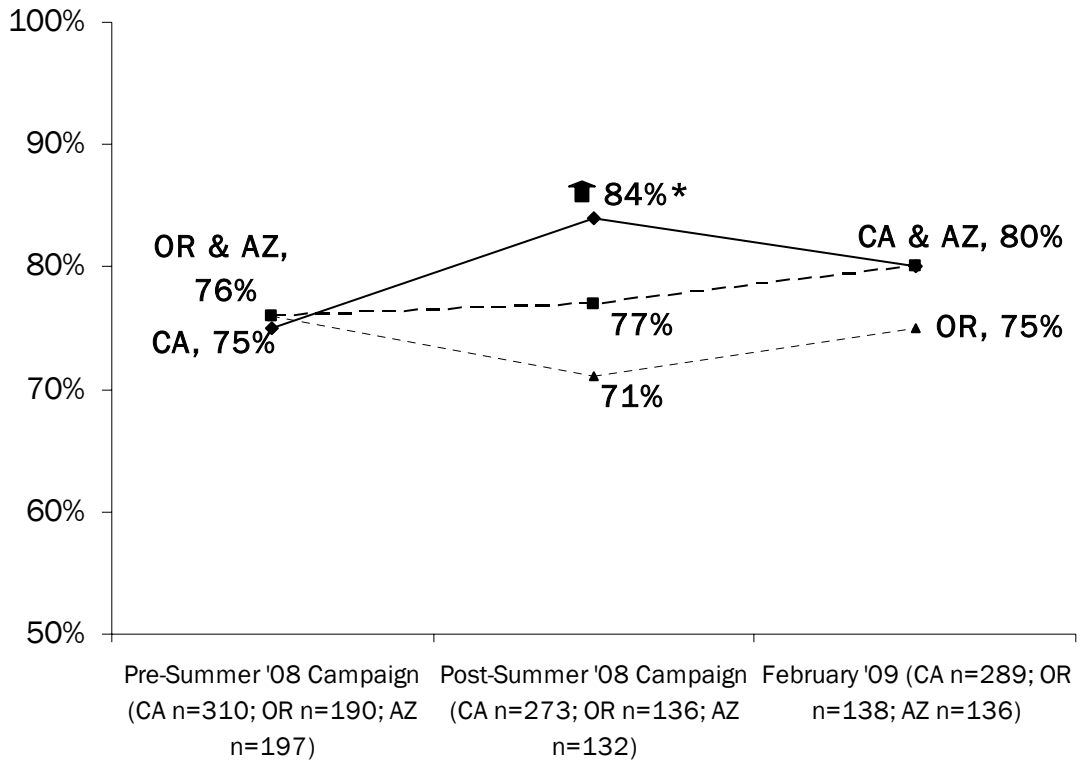
We asked only CA residents if they were aware of the FYP website. The Figure below shows that website awareness slightly increased after the Campaign, but it was not a statistically significant increase. Three months after the Campaign, awareness increased slightly more and was at that point significantly higher than before the Campaign, showing a delayed effect of the Campaign. It is uncertain why the Campaign would have this delayed effect and possible that efforts were in place during time period three that may have promoted the website, perhaps in the form of IOU bill mailings. It is also possible that it took a little time for word of mouth about the website to spread to more of the population. Notably, website awareness is not high at 45%, and there is much room for improvement, especially since the website provides the depth of information that the population needs to take action.

Figure 5. General Pop: % Aware of FYP Website



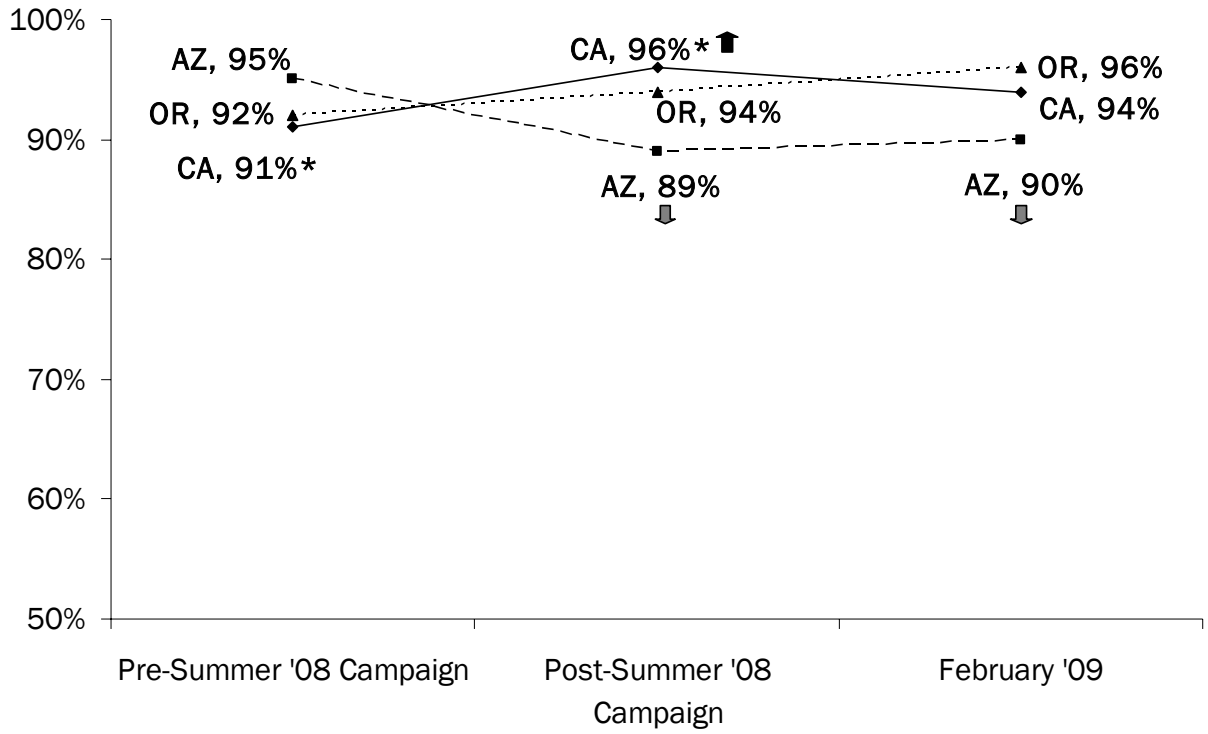
We asked respondents who purchased new light bulbs within three months of the survey whether they selected CFL models. The figure below shows that the percentage of Californians that selected CFL models significantly increased after the Campaign from 75% to 84%; however we could not say definitively that this increase was influenced by FYP because Californians were not statistically different from both comparison groups in time period two. Further, this positive trend was not prolonged because three months later CA bulb purchasers were selecting CFLs at statistically the same percentage as before the Campaign. Purchasers might need constant CFL messaging to influence their decision to select CFLs. Notably, as part of the overall FYP impact evaluation, our Structural Equation Modeling (SEM) analysis also examines this indicator. We are currently in the process of analyzing the SEM and Tracking Study data and will incorporate these findings into the Final Indirect Impact Report.

Figure 6. General Pop: % of Bulb Purchasers that Selected CFLs



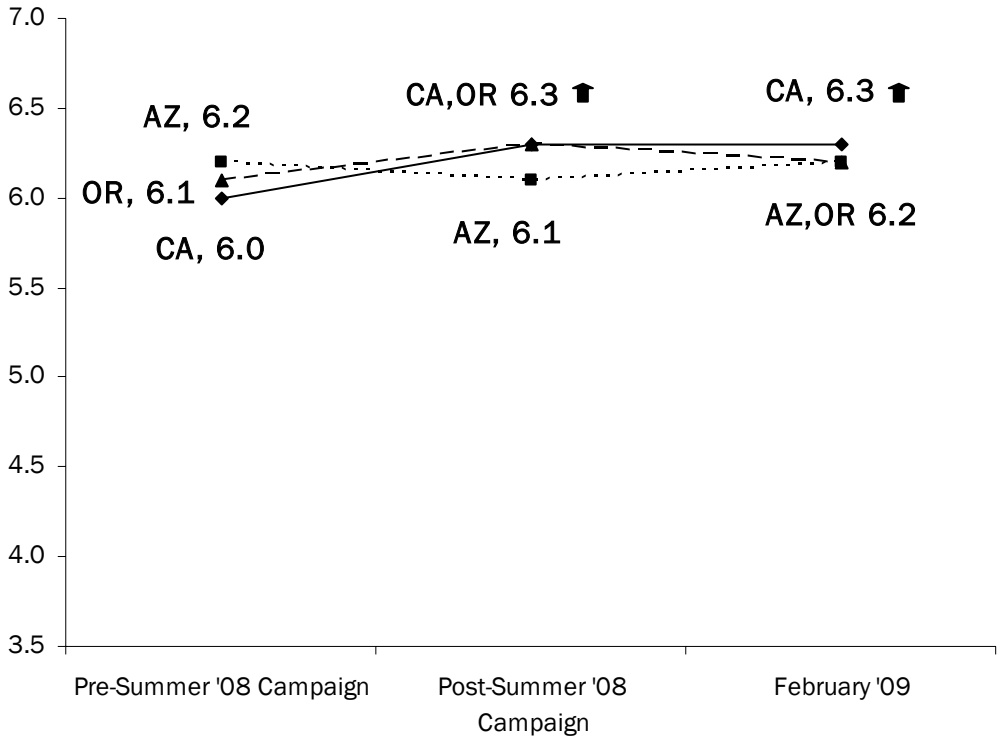
We asked CA residents, as well as those in comparison groups, whether they turn off lights before leaving a room. The figure below shows that the Campaign appears to have had an immediate positive trend on encouraging more people to turn off the lights before leaving a room; more people stated that they do this immediately after the Campaign than before, while one comparison group decreased and another remained consistent. However we cannot say definitively that this increase was influenced by the Campaign because Californians were not statistically different from both comparison groups in time period one or two. It's uncertain whether the Campaign had a prolonged effect on this behavior as the CA percentage dropped to parity with the pre-Campaign results while one comparison group decreased and another remained consistent. While these data indicate that residents may need constant messaging to remind them to turn off lights before leaving a room, this action appears to be one that a very large percent of the population actually performs and is most likely not worth pursuing in a Campaign.

Figure 7. General Pop: % Turn off lights before leaving a room



Using 7-point scales, we asked residents to rate their intent to purchase energy efficient appliances in the future, where "1" meant "very unlikely" and "7" meant "very likely". As shown in the Figure below, it appears that the Campaign may have had a prolonged effect on the population's intent to purchase energy efficient appliances in the future. The percentage with this intent increased immediately after the Campaign and stayed at this level three months afterward, while one comparison group remained consistent across time periods and another showed volatile results. However, there no statistical difference in the responses between CA and either of the comparison groups at any time period; therefore it unclear whether any changes seen here are a result of FYP.

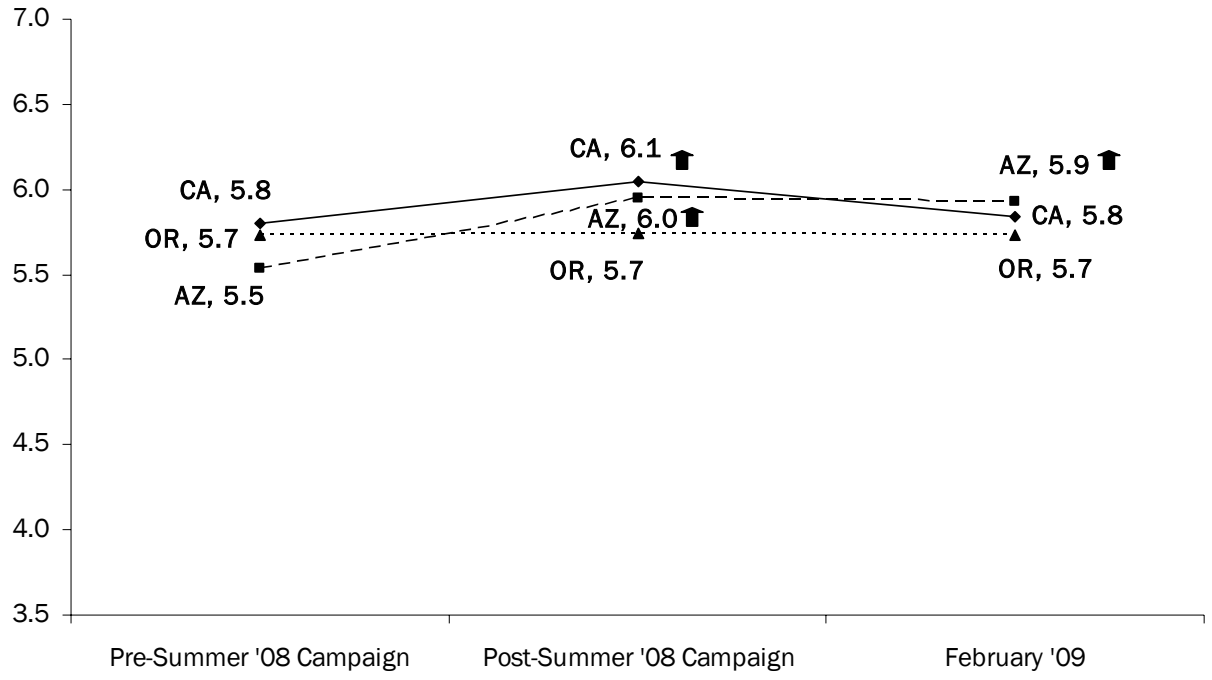
Figure 8. General Pop: Intent to Purchase Energy Efficient Appliances
(mean on 7-point likelihood to purchase scale, where 1 is very unlikely, and 7 is very likely)



Using 7-point scales, we asked residents to rate their intent to purchase CFLs in the future, where "1" meant "very unlikely" and "7" meant "very likely". The Figure belowFigure shows an immediate positive trend given that the percentage who intends to purchase CFLs increased immediately after the Campaign; however we could not definitively determine that this increase was due to FYP as one comparison group also increased while the other remained consistent. The Campaign does not appear to have had a delayed effect on intent as the population and the comparison groups in time period three were consistent with pre-Campaign results.

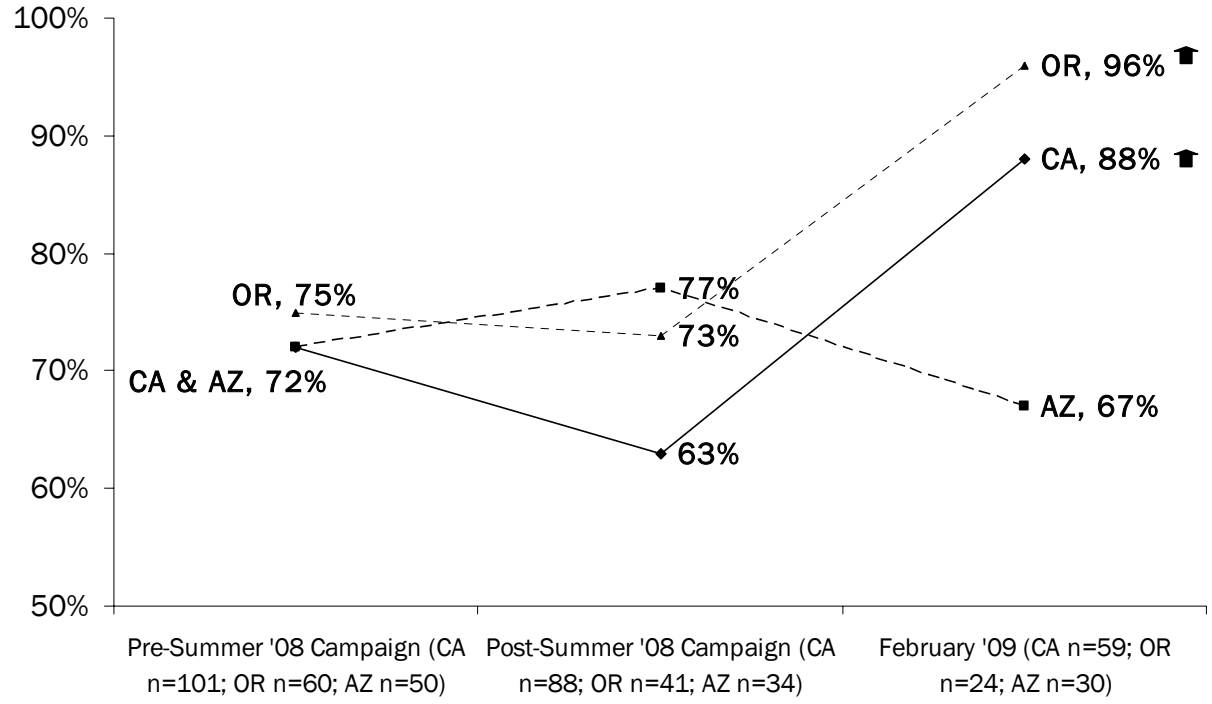
Figure 9. General Pop: Intent to Purchase CFLs

(mean on 7-point likelihood to purchase scale, where 1 is very unlikely, and 7 is very likely)



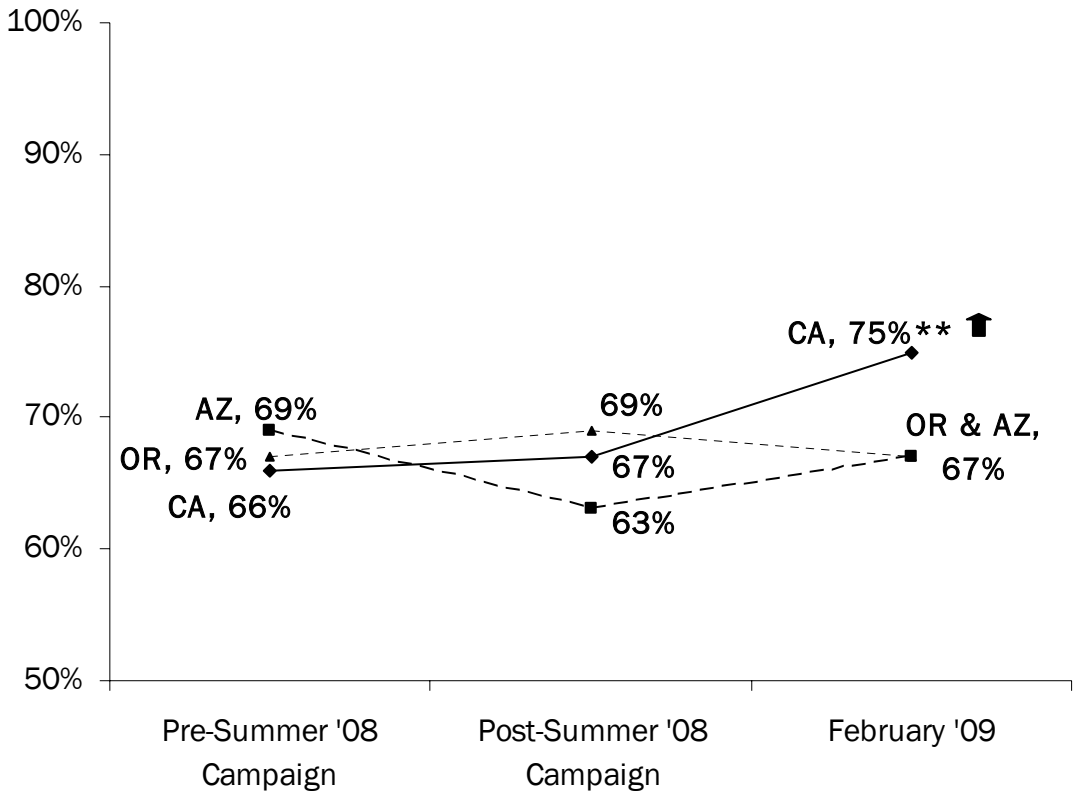
We asked residents that purchased a new appliance within three months of our survey whether they selected an energy efficient model. The figure below shows that the Campaign did not appear to have had an immediate effect on the population's appliance purchase decision; the percentage of appliance purchasers in CA that selected an energy efficient model decreased slightly after the Campaign while the comparison groups were more consistent, although these findings are not statistically significant. There is evidence of a possible delayed effect of the Campaign because the percentage of CA purchasers selecting energy efficient appliances increased significantly three months after the Campaign. However, one comparison group also increased; therefore it is unclear whether FYP is contributing to the increase.

Figure 10. General Pop: % of Appliance Purchasers that Selected Energy Efficient Models



We asked residents to rate their agreement with the statement "I am not very concerned about the amount of energy used in my home" on a four point scale (strongly agree to strongly disagree). The figure below shows the percentage of residents that strongly disagreed with this statement. Note that because this is a negatively worded statement, increases in the percent that strongly disagree indicate increased favorable perceptions toward energy saving. It appears that the Campaign may have had a delayed effect on the population's concern for the amount of energy used in their homes. While this concern did not immediately change after the Campaign, it did increase three months after the Campaign while the comparison groups remained consistent across all time periods. While our quantitative analytical logic would indicate a definitive Campaign impact, it is uncertain why the Campaign would have this delayed effect on concern for the amount of energy used in the home. If this effect was caused by the Campaign, we would likely see an immediate effect and not a delayed effect. For these reasons, it is not clear that this change is truly due to FYP and not to other issues that manifested themselves more in the CA population than the comparison states (such as the economy).

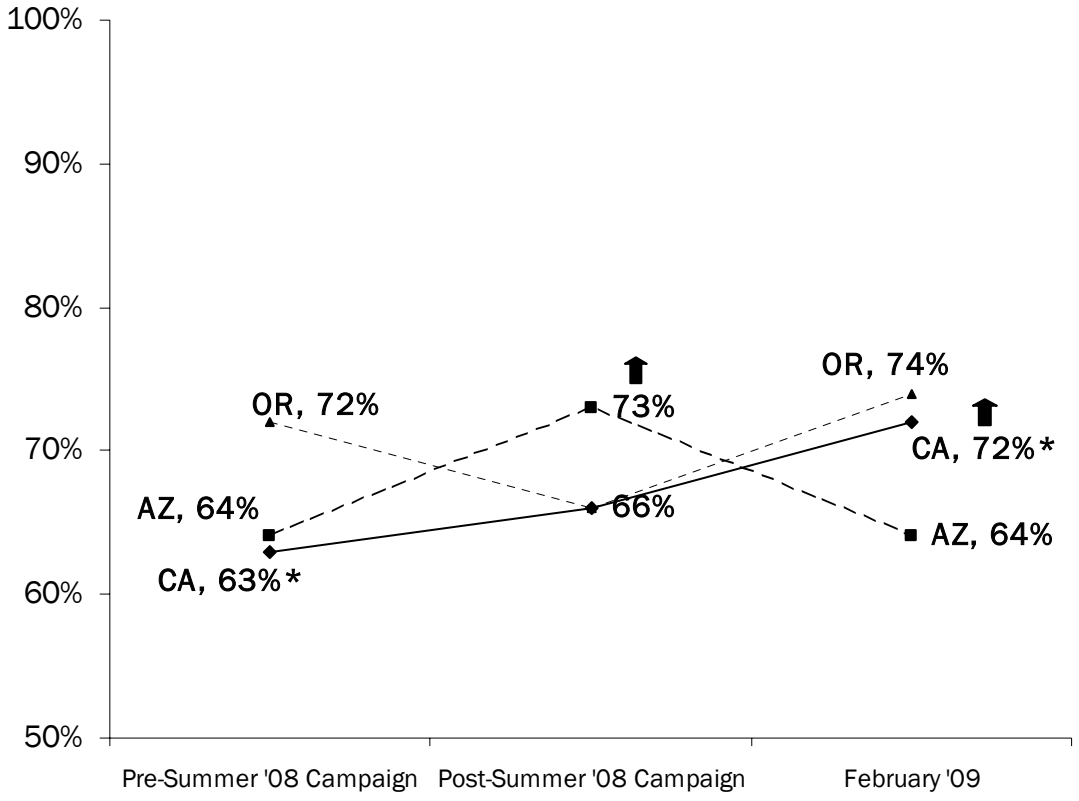
Figure 11. General Pop: % Strongly Disagree that They are Not Very Concerned About the Amount of Energy Used in the Home (on a four point scale)
(an increase shows more concern for energy use)



We asked residents to rate their agreement with the statement "The household consumer is such a small part of the whole energy consumption picture that it really doesn't matter how a household uses energy" on a four point scale (strongly agree to strongly disagree). The figure below shows the percentage of residents that strongly disagreed with this statement. Note that because this is a negatively worded statement, increases in the percent that strongly disagree indicate increased favorable perceptions toward energy saving. It appears that the Campaign may have had a delayed effect on the perception that the household consumer is not a small part of the energy consumption picture. While this perception did not immediately change after the Campaign, it did increase three months after the Campaign while one comparison group was consistent and another increased and then decreased. As with the previous graph, though, it is unclear why this type of belief would have changed in the absence of the FYP messaging and may be more indicative of other messages in the market between time periods two and three.

Figure 12. General Pop: % Strongly Disagree that Households are Such a Small Part Of the Energy Consumption Picture... (on a four point scale)

(an increase shows more belief that households are part of the energy consumption picture)



No Effects of the Campaign

Several key indicators measured in our study were not affected by the Campaign or other outside influences. These indicators and the key conclusions drawn from our study are summarized in the table below.

Table 3. General Pop: Key Indicators Unaffected by the Campaign

Key Indicators		Conclusion
Awareness	Belief that energy tips are easy to find	The Campaign did not have an effect on the population's belief that energy tips are easy to find; the population's belief was consistent throughout the time periods while one comparison group decreased and another was consistent.
	Awareness of toll-free number (rural only)	The Campaign did not have an effect on awareness of the toll-free number; awareness did not increase immediately after the Campaign or three months afterward.
Actions Taken	% of A/C purchasers that selected an EE model	The number of A/C purchasers in our sample was too small to draw any meaningful conclusions.
EE Perceptions	Everyone should make a real effort to save energy in the home	The Campaign did not appear to have an effect on the perception that everyone should make a real effort to save energy in the home; the population and the comparison groups remained consistent across time periods.
	Believe global warming is occurring	The Campaign did not appear to have an effect on the perception that global warming is occurring; the population and the comparison groups remained consistent across time periods.
	Believe that Household Energy Consumption Impacts Global Warming (among those that believe it is occurring)	These perceptions did not immediately change after the Campaign, but the perception grew to significantly greater than both comparison groups three months after the Campaign. The data points more to general beliefs held by the CA population that are different from the comparison states, not necessarily influenced by FYP.
	Household seeks out the most energy efficient product available.	The Campaign did not appear to have an affect on respondents' agreement with this perception. There were no significant changes during any of the time periods in CA or any of the comparison states.

Negative Trends

One indicator decreased over time showing a negative trend. While the cause of the decrease is unknown it is important to note this area as it might warrant further investigation as to whether FYP has the potential to reverse the negative trend.

Table 4. General Population: Negative Trends

Key Indicators	Conclusion
Familiarity with CFLs	CA respondents' average familiarity rating decreased significantly following the campaign, while those in comparison states significantly increased or stayed the same. Three months later, all groups' averages were no different from six months prior.

CA General Spanish-Speaking Population

Table 5. Spanish-Speaking Population: Key Indicators Likely Affected by the FYP Summer '08 Campaign [8]

Key Indicators		Immediate Effect of Summer '08 Campaign	Effect of Summer '08 Campaign 3 months afterward	Conclusion
Awareness & Knowledge	Awareness of Flex Your Power	⬆	No Impact	The percent of the population that reported awareness of FYP significantly increased after the Campaign. However, the Campaign appeared to have no effect on awareness levels three months later.
	Energy efficiency knowledge	⬆	No Impact	The Campaign had an immediate effect on the population's energy efficiency knowledge; knowledge increased after the Campaign, while that of the comparison group remained unchanged. However, the Campaign had no long term effect as three months later the level of knowledge dropped to the pre-Campaign level.
	Energy conservation Knowledge	⬆	Prolonged Effect	The Campaign had an immediate effect on the population's energy efficiency knowledge; knowledge significant increased after the Campaign, while that of the comparison group decreased. Three months later, the increased level of knowledge remained higher than before the Campaign.
EE Perceptions	Household seeks out the most energy efficient product available.	No Impact	Delayed Effect	Following the Campaign, there was no significant increase in Californian's reporting agreement with this perception. However, three months later, more Californian's reported that they seek the most energy efficiency product available than before the Campaign and than the comparison group.
	Belief that energy tips are easy to find	⬆	Prolonged Positive Trend	The Campaign had an immediate effect on the population's belief that energy tips are easy to find; there was a significant increase following the Campaign and a significant difference from those in the comparison group. However, three months later there is only partial evidence for a prolonged effect: while those in California reported significantly higher levels of belief than those in the comparison group, the level of belief in California was no longer significantly different from the pre-Campaign level.

[8] Arrows in this table indicate a significant increase or decrease in the data compared to Time Period 1 at 90%.

Table 6. Spanish-Speaking Population: Key Indicators Showing Trends with Uncertain Causes

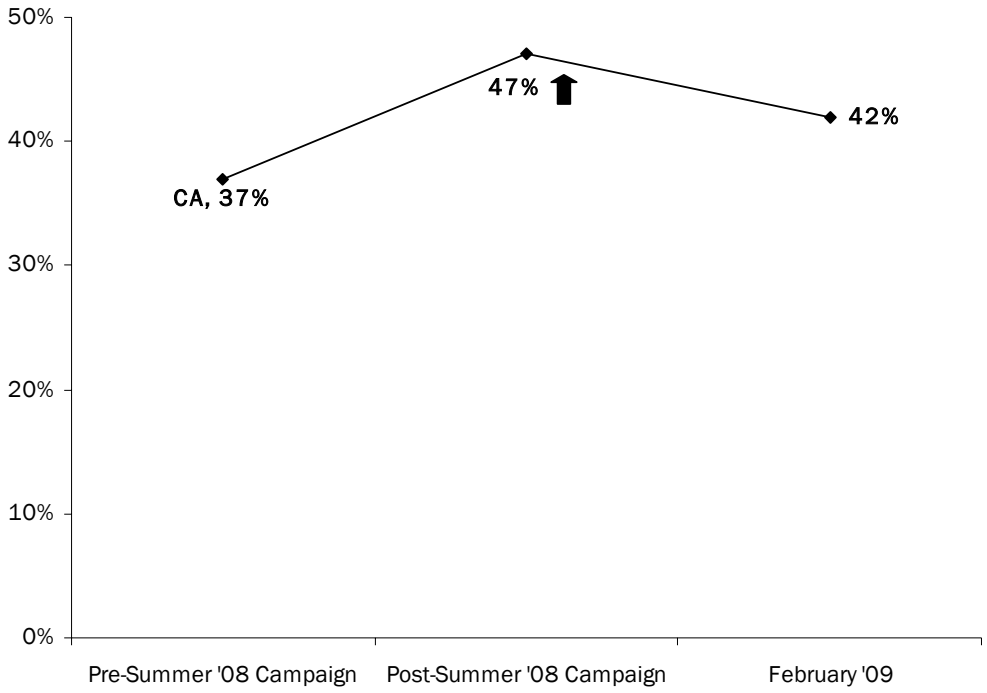
Key Indicators		Immediate Effect of Summer '08 Campaign	Effect of Summer '08 Campaign 3 months afterward	Conclusion
Exposure	Exposure to energy efficiency messaging	Immediate Positive Trend	Prolonged Positive Trend	The Campaign had an immediate positive influence on the population's exposure to energy efficiency messaging; there was a significant increase following the Campaign, while there was no such significant increase in the comparison group. However, three months later there is only partial evidence for a prolonged effect: while those in California reported significantly higher levels of exposure than those in the comparison group, the level of exposure in California was no longer significantly different from the pre-Campaign level.
EE Perceptions	Believe home energy use is connected to global warming (among those that believe it is occurring)	Immediate Positive Trend	No Impact	The Campaign may have had an immediate positive influence on the belief in the impact of home energy use on global warming. While the increase in belief following the Campaign was not significant compared to the pre-Campaign level, it was significantly greater than that of the comparison group in the same time period. However, the Campaign appeared to have no effect three months later: not only was there no significant increase in the CA population, there was no longer a significant difference between CA and the comparison group.
EE Perceptions	Believe global warming is occurring	No Impact	Delayed Positive Trend	The Campaign did not appear to have an immediate effect on the perception that global warming is occurring; the population and the comparison groups remained consistent before and after the Campaign. However, the Campaign may have has a delayed effect on the population's perceptions: while the increase in California three months later was not significant, the decrease in the comparison group was, therefore suggesting that the Campaign may have prevented a drop off in the long term.

Below we provide some detailed information for the Spanish-speaking Population findings. First, we show the indicators where we found impacts that are likely due to the FYP Campaign. Second, we show the indicators where we found positive trends but are uncertain as to whether the FYP Campaign contributed to the trends. Lastly, we summarize the indicators where we found no signs of potential Campaign impacts.

Key Indicators Likely Affected by the FYP Summer '08 Campaign[9]

We asked Californians (but not those in the comparison group) whether or not they had heard of "Flex Your Power."[10] The Campaign appears to have had an immediate but not prolonged effect on the population's awareness of FYP. The Figure below shows a significant 10% increase in Californians' awareness of the FYP brand name following the Campaign, yet it did not remain at that level three months afterward. There was no significant difference in awareness level from before the Campaign to three months after its end.

Figure 13. Spanish-Speaking Pop: % Aware of Flex Your Power

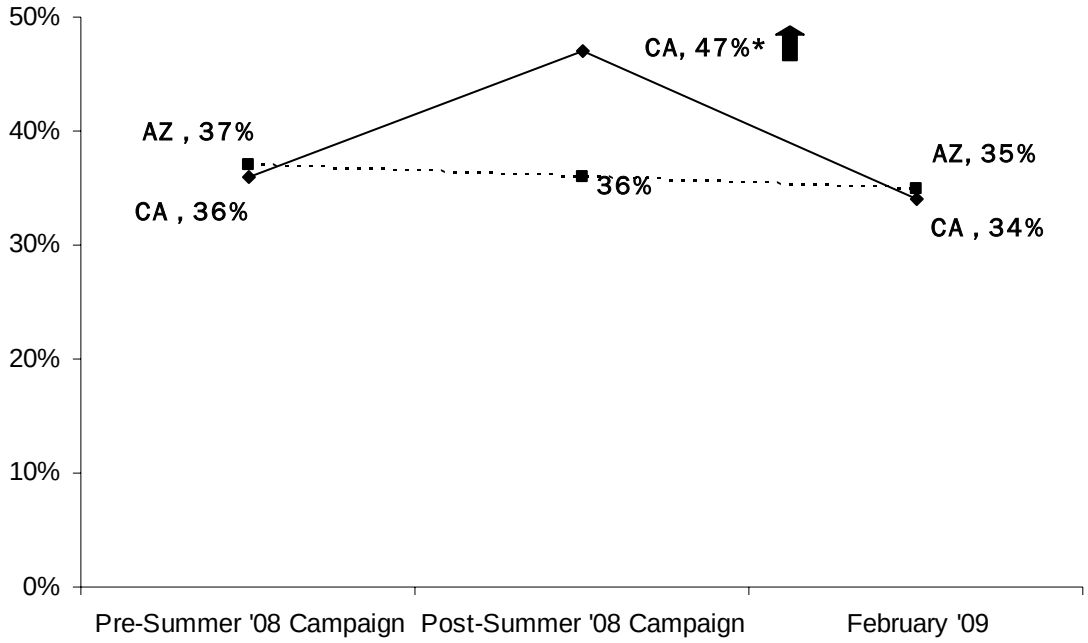


[9] Throughout this report we compared the data between CA Spanish-speakers and the comparison group and across time periods to analyze differences in the population at the 90% confidence interval. In each graph or table, we use an asterisk, *, to indicate a difference between CA and the comparison group. Block arrows in each graph or table indicate a statistically significant increase or decrease in the data when compared to the data collected prior to the Summer '08 Campaign.

[10] Error from affirmative response bias was mitigated by including non-existent programs on the list as well as rotating the order of the items across respondents.

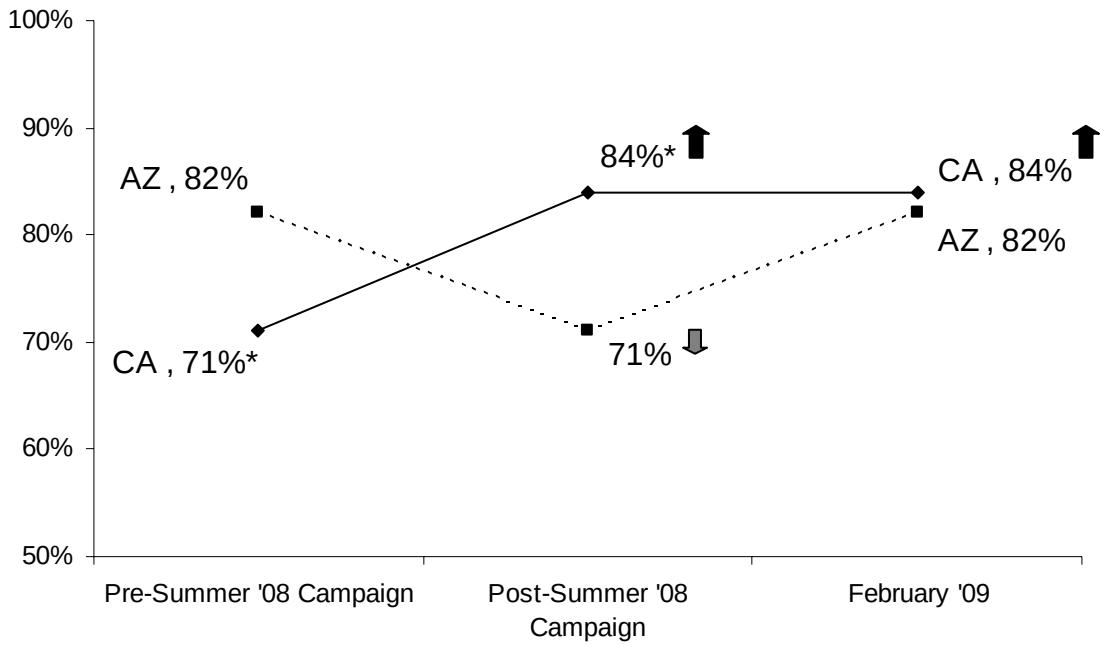
We asked Spanish-speaking Californians, as well as those in the comparison state, to list three improvements a person might make to lower a home energy bill. The Figure below reflects evidence for the immediate, but not prolonged, effect of the FYP Campaign on energy efficiency knowledge. The Campaign had an immediate effect on the population's knowledge of ways to save energy in the home as evidenced by a significant 11% increase following the Campaign. The comparison group remained unchanged during the same time period suggesting that the increase in California was unique. However, there is no evidence that the Campaign had a prolonged effect on the knowledge level. Three months later, the level of knowledge dropped to the pre-Campaign level while remaining unchanged in the comparison group.

Figure 14. Spanish-Speaking Pop: Knowledge of Ways to Save Energy
(% that could provide at least one unaided energy efficiency response)



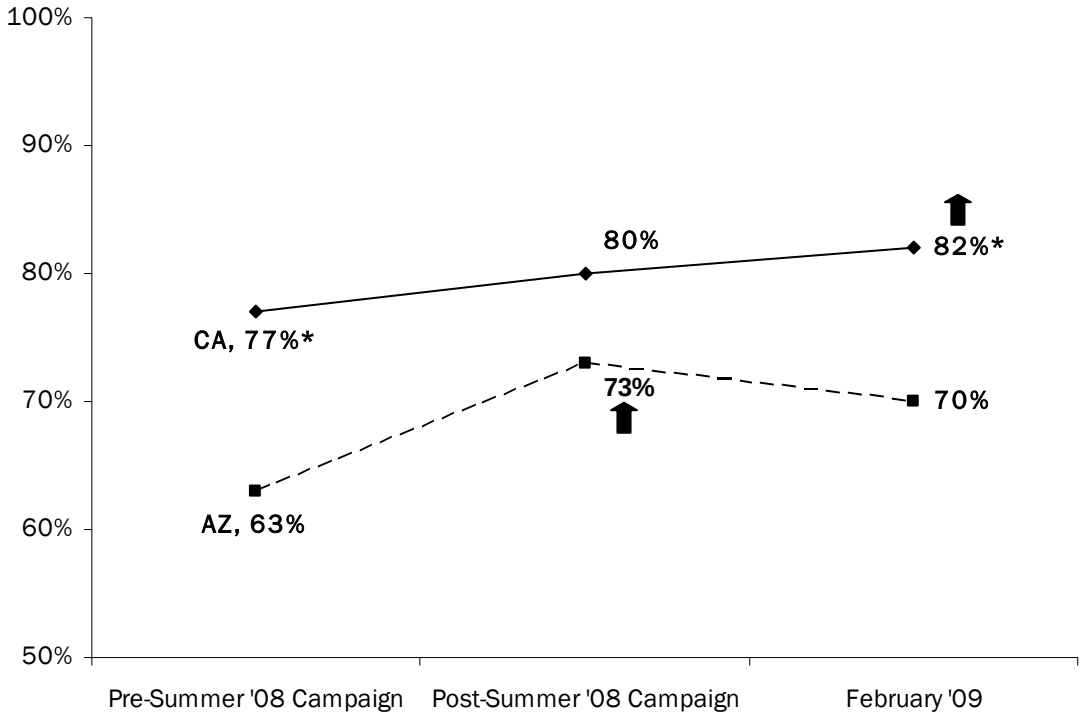
The Campaign also had an immediate impact on the population's energy conservation knowledge. Energy conservation knowledge increased significantly immediately after the Summer '08 Campaign and stayed at that level three months afterward. Meanwhile, the comparison group's knowledge decreased in time period 2. In addition, Californian's knowledge was significantly lower than the comparison group's before the Summer Campaign and grew to significantly greater right after the Campaign and to parity three-months afterward.

Figure 15. Spanish-Speaking Pop: Knowledge of Ways to Save Energy
(% that could provide at least one unaided energy conservation response)



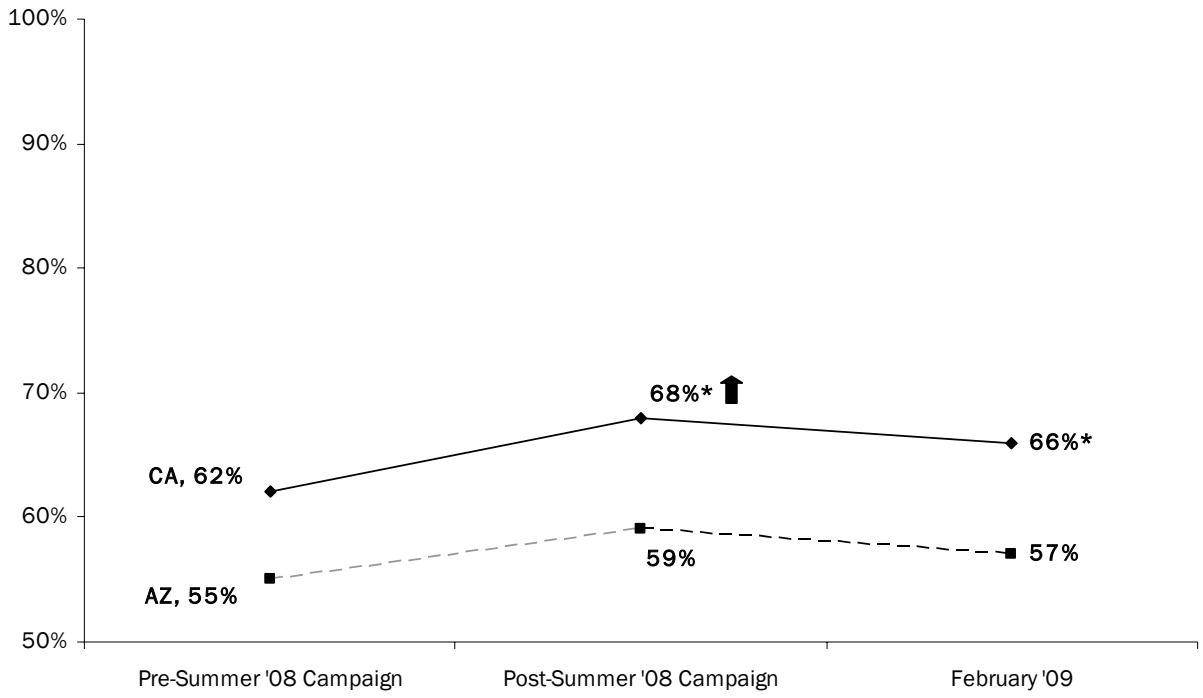
We asked respondents to rate their agreement with the statement "When looking to buy a product that uses energy, my household seeks out the most energy efficient product available" on a four point scale (strongly agree to strongly disagree). The Figure below shows the percentage of residents that strongly agreed with this statement. We saw no immediate effect of the Campaign on the California Spanish-speaking population, even as the comparison group showed a significant increase. However, there is evidence for a delayed effect three months later: there was a significant increase relative to the pre Campaign level among Californians, while there the comparison group fell back to their baseline level.

Figure 16. Spanish-Speaking Pop: % Strongly Agree that Household Seeks Out the Most Energy Efficient Product Available



We asked residents to rate their agreement with the statement "Information and tips on how to save energy in my household are easy to find" on a four point scale (strongly agree to strongly disagree). The Figure below shows that the Campaign had an immediate effect on the population's belief that energy tips are easy to find; there was a significant 6% increase following the Campaign, and this increase caused a significant difference between CA and the comparison state that had not been there before the Campaign. However, three months later there was only partial evidence for a prolonged effect: while those in California reported significantly higher levels of belief than those in the comparison group (66% vs. 57%), the level of belief in California was no longer significantly higher than the pre-Campaign level.

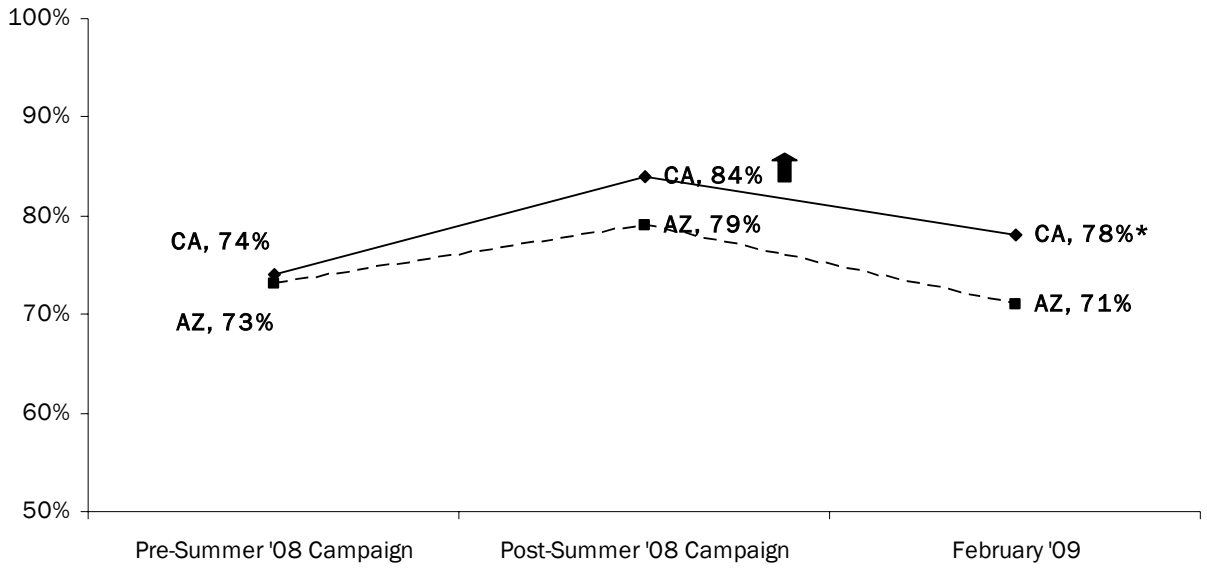
Figure 17. Spanish-Speaking Pop: % Strongly Agree that Information and Tips on how to Save Energy in the Household are Easy to Find (on a four point scale)



Key Indicators Showing Trends with Uncertain Causes

We asked respondents whether they were exposed to any energy efficiency messaging in the three months leading up to our survey in each time period. As shown in The Figure below, messaging exposure in CA increased by 10% after the FYP summer Campaign was implemented. This increased exposure was likely due in part to the additional FYP messaging in the CA marketplace, especially given that the comparison group's exposure to EE messaging did not significantly increase during this time. However, three months later there was only partial evidence for a prolonged effect: while those in California reported significantly higher levels of exposure than those in the comparison group, the level of exposure in California was no longer significantly different from the pre-Campaign level.

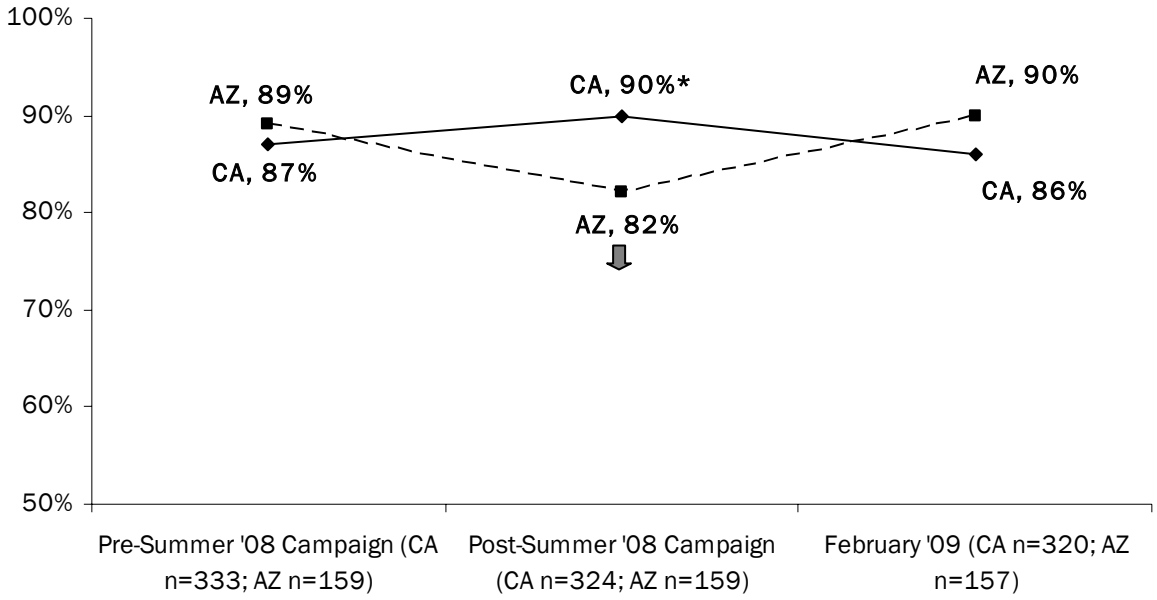
Figure 18. Spanish-Speaking Pop: % Self-Claimed Exposure to Energy Efficiency Messaging



We asked residents to rate their agreement with the statement "I believe that household energy has an impact on global warming" on a seven point scale, with "1" meaning "strongly agree" and "7" meaning "strongly disagree". The Figure below shows the percent of those who expressed any agreement (i.e., scored a 5, 6, or 7) across the time periods. Importantly, in the present analysis, we only used the data of those people who expressed belief in global warming. There is some evidence that the Campaign had an immediate effect on the belief that home energy use impacts global warming. While the increase in belief following the Campaign was not significant compared to the pre-Campaign level, it became significantly greater than that of the comparison group following the Campaign as the comparison group dropped significantly. Thus, it is possible that the FYP Campaign mitigated a drop off that would have otherwise occurred in its absence. However, the Campaign appeared to have no effect three months later: in both groups there were no significant differences between time periods one and three.

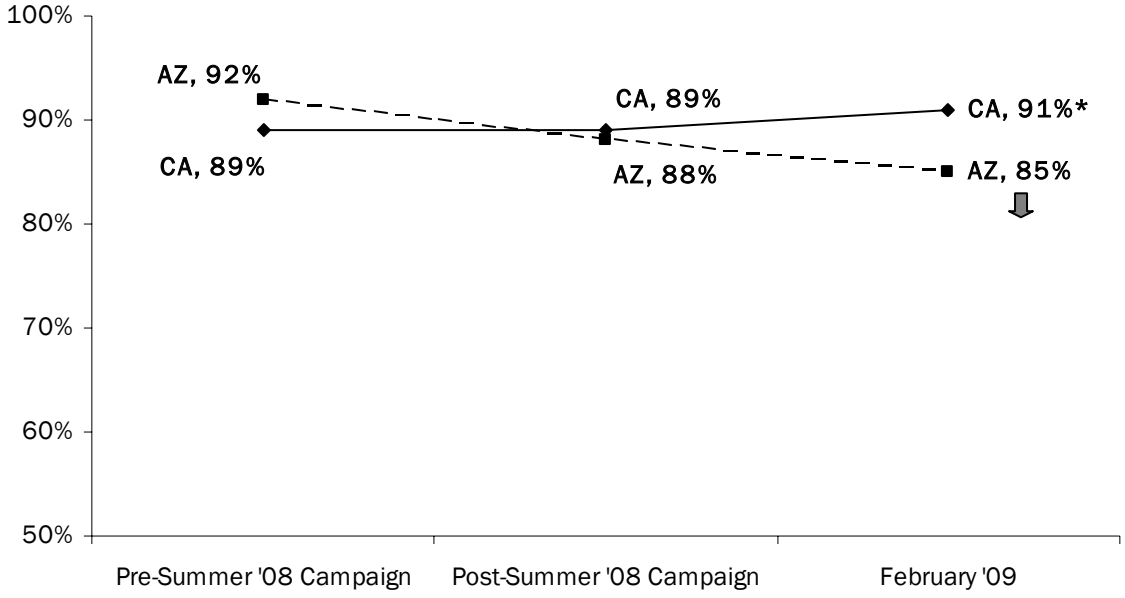
Figure 19. Spanish Pop: % Agree that Home Energy Impacts Global Warming, among Those who Believe Global Warming is Occurring

(those who scored a 5, 6, or 7, where 1 is strongly disagree, and 7 is strongly agree)



We asked residents to rate their agreement with the statement "I believe that global warming is occurring" on a seven point scale, with "1" meaning "strongly agree" and "7" meaning "strongly disagree". The Figure below shows the percent of those who expressed any agreement (i.e., scored a 5, 6, or 7) across the time periods. The Campaign did not appear to have an immediate effect on the perception that global warming is occurring; the population and the comparison groups remained consistent from before to after the Campaign. However, the Campaign may have had a delayed effect on the population's perceptions: while the increase in California three months later was not significant, the decrease in the comparison group was. This suggests that the Campaign may have prevented a drop off over the long term.

Figure 20. Spanish Pop: % Agree that Global Warming is Occurring
(those who scored a 5, 6, or 7, where 1 is strongly disagree, and 7 is strongly agree)



No Effects of the Campaign

Several key indicators measured in our study were not affected by the Campaign. These indicators and the key conclusions drawn from our study are summarized in the table below.

Table 7. Spanish-Speaking Pop: Key Indicators Unaffected by the Campaign

Key Indicators		Conclusion	Favorable Ratings >/= 90% of Pop or Scale
Awareness	Awareness of toll-free number (rural only)	Awareness did not increase immediately after the Campaign or three months afterward.	No
	Awareness of FYP website	Awareness did not significantly increase after the Campaign or three months afterward.	No
Actions Taken	Selected CFLs	There were no significant changes in either time period or differences against the comparison groups.	Yes; at Time 3, 90% of bulb purchasers selected CFLs.
	Selected energy efficient air conditioners	The number of A/C purchasers in our sample was too small to draw any meaningful conclusions.	n/a
	Selected energy efficient appliances	There was no effect of the Campaign on the population's selection of energy efficient appliances when in the market for them after the Campaign or three months later; there were no significant changes in either time period or differences against the comparison groups.	No
	Turning off lights	There was no effect of the Campaign, either after the Campaign or three months later, on turning off lights; there were no significant changes in either time period or differences against the comparison groups.	Yes; at Time 3, 98% reported turning off lights in unoccupied rooms.
Action Intent	Intent to purchase CFLs	There were significant decreases in both California and the comparison group immediately after the Campaign. After three months, there appeared to be no effect of the Campaign: the level of intention was significantly less than pre-Campaign levels, while there was no such significant difference found in the comparison group.	Yes; at Time 3, the average rating was 6.4 on a 7 point scale.
	Everyone should make a real effort to save energy in the home	The current Campaign did not appear to have an effect on the perception that everyone should make a real effort to save energy in the home; the population remained consistent across time periods, while within the comparison group, there were significant increases across times.	Yes; at Time 3, 90% strongly agreed with this perception.

EE Perceptions	Concerned about the amount of energy used in the home	The Campaign did not appear to have an effect on the concern about the amount of energy used in the home. The CA population remained consistent across time periods, while within the comparison group there was a significant increase in time period three.	No

Negative Trends

Some indicators decreased over time showing negative trends. While the cause of the decrease is unknown it is important to note these areas as they stand further investigation as to whether FYP has the potential to reverse the negative trend.

Table 8. Spanish-Speaking Population: Negative Trends

Key Indicators	Conclusion
Intent to purchase energy efficient appliances	Following the Campaign, there was a significant decrease in intention level while there was no such decrease in the comparison group. Similarly, three months later, there was a significant decrease compared to pre-Campaign levels while there was no such decrease in the comparison group.
Perception that the household consumer is not a small part of the whole energy consumption picture	The Campaign did not appear to have an effect on the perception of the role the household consumer plays in the whole energy consumption picture; following the Campaign, there was no change, and by time period three, there was a significant decrease in disagreement indicating significantly fewer people believed that the energy use of the household consumer matters. Meanwhile the perception within the comparison group remained consistent across all times.

APPENDIX A: OTHER KEY INDICATORS

This study tracked several other variables that were not necessarily widely promoted by the SWM&O programs through mass media advertising. These variables might have been promoted through non-mass media activities such as the FYP website content, Community Based Organization events, and the e-Newswire. As shown by the tables below, we did not find changes in many of these other key indicators in the tracking study. This is expected as the effects from the non-mass media advertising are unlikely to get picked up from this general population study. Where changes in the population were found, it is likely that other initiatives beyond the SWM&O Campaigns contributed to these changes, such as IOU and 3rd party marketing efforts. Furthermore, we added a column to identify indicators with favorable ratings, i.e. 90% or more of the population indicated they are aware, took action, or have a perception. It is important to call out these indicators because if they are already favorable in the population, no resources should be spent on attempting to influence them.

Table 9. General Population: Campaign Effects on Other Key Indicators

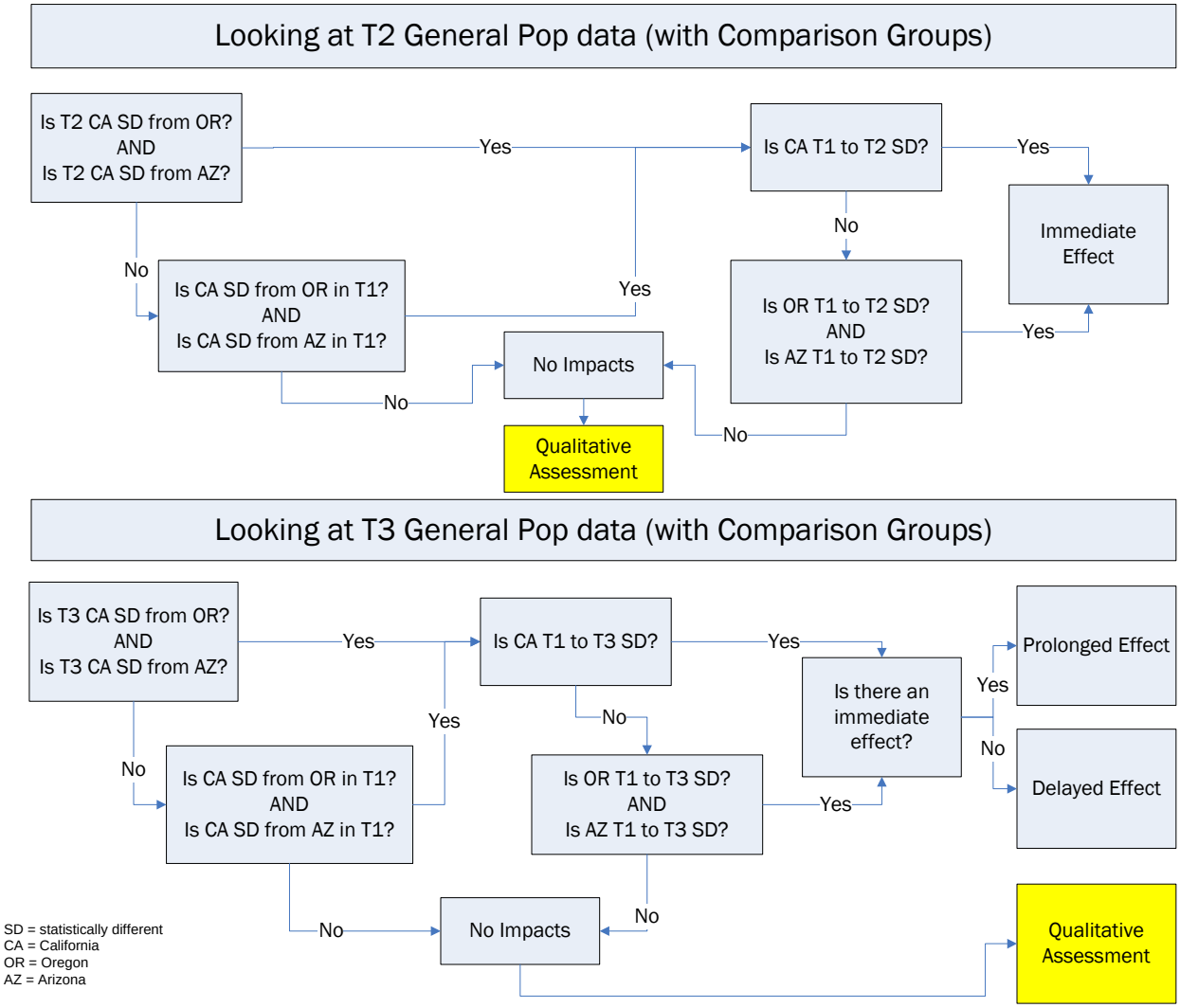
Key Indicators		Post-Summer '08 Campaign	February 2009	Favorable Ratings >/= 90% of Pop
Awareness	Awareness of rebates and utility incentives	⬆	⬆	No
	Awareness of energy audits	⬆	⬆	No
	Awareness of utility websites	No impact	⬆	No
Actions Taken	Adjust thermostat to save energy	No impact	No Impact	No
	Participate in utility rebate program	No impact	⇩	No
	Take shorter showers	No impact	No impact	No
	Make sure dishwasher and clothes washer are full	No impact	No impact	Yes; at Time 3, 93% reported filling clothes washer, and 94% reported filling dishwasher.
	Unplug/turn off power adapters when not in use	No impact	No impact	No
	Likelihood to participate in utility programs	No impact	⬆	No

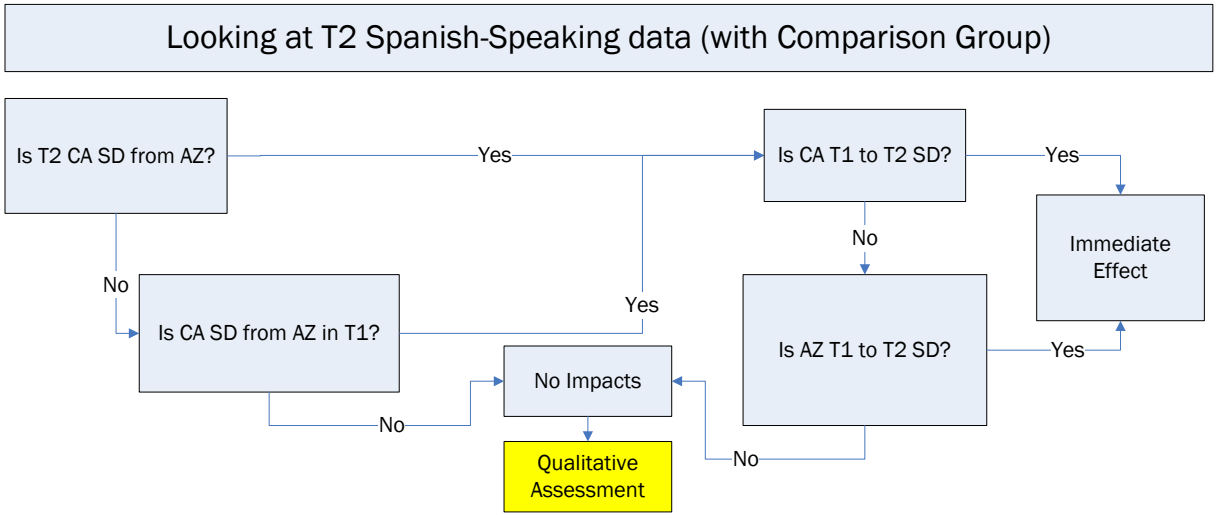
Table 10. Spanish-Speaking Population: Campaign Effects on Other Key Indicators

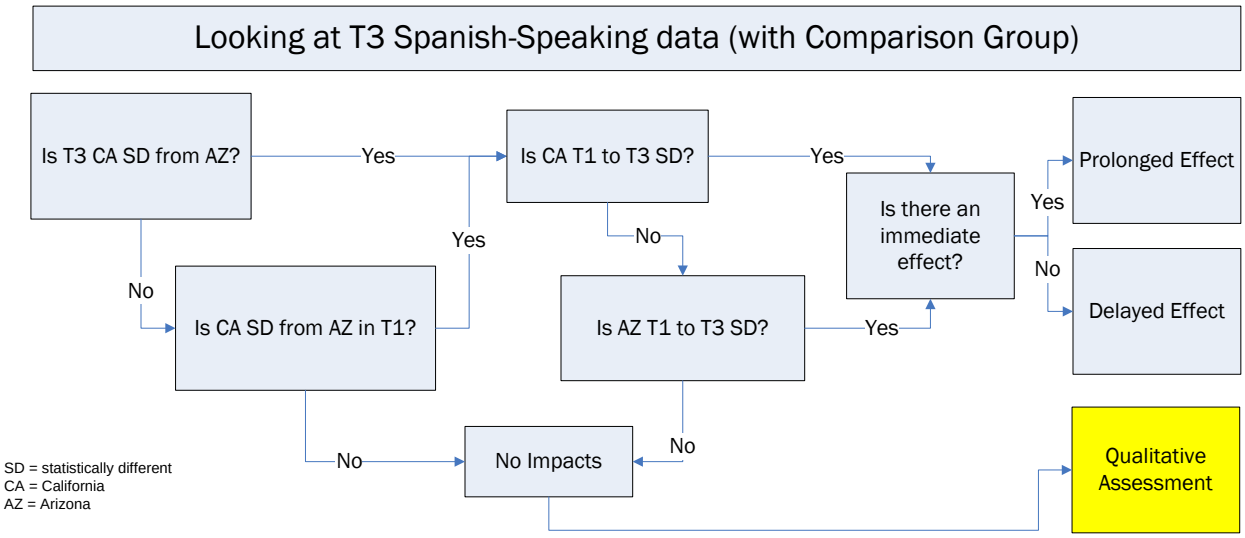
Key Indicators		Post-Summer '08 Campaign	February 2009	Favorable Ratings >/= 90% of Pop or Scale
Awareness	Awareness of rebates and utility incentives	⬆	No impact	No
	Awareness of energy audits	No impact	No impact	No
	Awareness of utility websites	No impact	No impact	No
	Familiarity with CFLs	No impact	No impact	No
Actions Taken	Adjust thermostat to save energy	No impact	No impact	Yes; at Time 3, 93% reported adjusting thermostat.
	Participate in utility rebate program	No impact	No impact	No
	Take shorter showers	No impact	Possible delayed effect	Yes; at Time 3, 92% reported taking shorter showers.
	Make sure dishwasher and clothes washer are full	No impact	No impact	Yes; at Time 3, 96% reported filling clothes washer, but only 89% reported filling dishwasher.
	Unplug/turn off power adapters when not in use	No impact	No impact	No
	Likelihood to participate in utility programs	No impact	No impact	No

APPENDIX B: ANALYSIS LOGIC

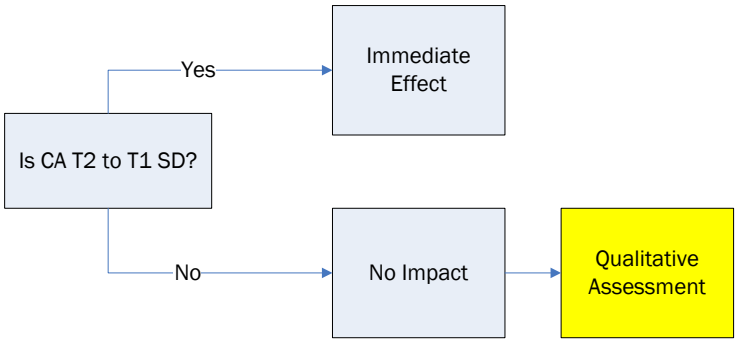
Note that we will present our logic differently in the final report to better present our approach to determining FYP impacts.



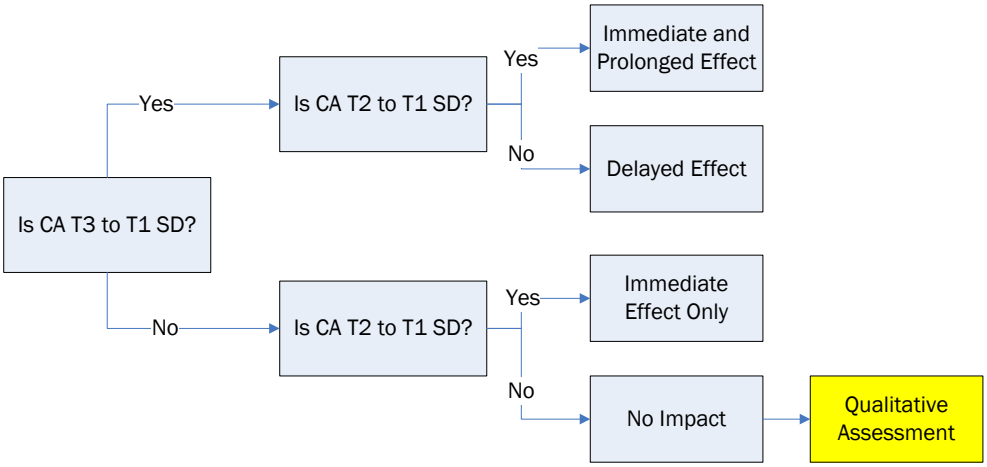

Looking at T2 Spanish-Speaking data (with Comparison Group)
Is T2 CA SD from AZ?
Yes
Is CA T1 to T2 SD?
Yes
Immediate Effect
No
Is CA SD from AZ in T1?
Yes
Is AZ T1 to T2 SD?
Yes
No Impacts
No
Qualitative Assessment
No


Looking at T3 Spanish-Speaking data (with Comparison Group)
Is T3 CA SD from AZ?
Yes
Is CA T1 to T3 SD?
Yes
Is there an immediate effect?
Yes
Prolonged Effect
Yes
No
No
Is CA SD from AZ in T1?
No
Is AZ T1 to T3 SD?
Yes
Delayed Effect
No
No Impacts
No
Qualitative Assessment
SD = statistically different
CA = California
AZ = Arizona

Looking at T2 General Pop and Spanish-Speaking data (No Comparison Groups)



Looking at T3 General Pop and Spanish-Speaking data (No Comparison Groups)



B.2 Data Collection Instrument

This survey will be fielded to 800 residential customers throughout California (approximately 400 English and 400 Spanish) each quarter (or as appropriate).

Unless otherwise noted, questions will be asked both in and outside of California to compare changes over time. This will allow our team to account for nationwide changes as well as look for direct comparisons, where appropriate. Note that we are in the process of developing our "out of state" comparison group. Currently, the ODC team is considering New York, Arizona, and Oregon as potential comparison groups.

Measures and Behaviors Promoted by FYP Statewide Campaigns						
Measure/Behavior	**FYP 2006**	**FYP 2007**	**FYPR 2006**	**FYPR 2007**	**FYPS 2006**	**FYPS 2007**
Buy/Install CFLs	**TV-R**	**TV-R-P**	**P**	**R-P**	**TV**	**TV**
Buy/Install EE Lighting Products	**TV**					
Install/Use Ceiling Fans	**TV**		**P-R**	**P**		
Buy Energy Star Appliance/s	**R**			**R-P**	**TV**	**TV**
Install EE A/C Unit/s	**R**	**TV-R-P**		**R-P**		**TV**
Install Programmable Thermostat				**R**	**TV**	
Install EE Furnace	**R**	**R**	**P-R**	**R**	**TV**	
Adjust Thermostat (Turn Up or Down)	**R**		**P-R**	**P-R**		
Insulate Home			**P-R**	**R**	**TV**	
Install Evaporative Cooler					**TV**	**TV**
Install/Use Whole House Fan						**TV**
Use less energy					**TV**	**TV**
Seal Ducts					**TV**	
Install EE Water Heater		**R**				
Install/Use Dimmers				**R-P**		
Install Weather Stripping			**R**			
Turn Off A/C at Night					**TV**	
Tune-Up HVAC System					**TV**	

Introduction

"I am calling from Opinion Dynamics on behalf of the California Public Utilities Commission. I would like to ask you a few questions to help the State of California better manage their energy resources." [1]

S1. Do you own or rent your home[2]?
- 1 Own
- 2 Rent or lease
- 00. (Other, Specify)
- 98. (Don't know)
- 99. (Refused)

[ASK S2 & S3 if California]
S2. Who is your electric company?
- 1. Pacific Gas & Electric/PG&E
- 2. Southern California Edison/Edison/SCE
- 3. San Diego Gas & Electric/SDG&E
- 00. Other, specify
- 98. (Don't know)

X1. What type of fuel do you use to heat your home? (PROBE IF NECESSARY)
- 1. Electric
- 2. Gas
- 00. (Other, Specify)
- 98. (Do not have heat /Don't know)

[ASK IF X1=2]
S3. Who is your gas company?
- 1, Pacific Gas & Electric/PG&E
- 2. Southern California Gas/The Gas Company/SoCalGas
- 3. San Diego Gas & Electric/SDG&E
- 00. Other, specify
- 98. (Don't know)

Decision Makers[3]

M1. In your household, which of the following activities are you involved in: [1=Yes, 2=No, 3=(DK)]
- A. Reviewing and/or paying your monthly electric and natural gas bill
- B. Calling your utility company when there is a problem

[1] Note this introduction will be changed when fielding in the comparison groups.
[2] Should be part of the demographics
[3] This question was drawn from the SCE tracking survey conducted by Heiner and Partners in 2007

C. Making decisions about buying new appliances or making improvements to your home
D. Purchasing light bulbs for your home

[TERMINATE IF ALL M1A-D=2 or 3]

A. Importance of Energy Efficiency

[ASK All RENTERS, HALF OWNERS]
A2. Please consider the things that would influence your purchase of a NEW REFRIGERATOR or CLOTHES WASHING MACHINE if and when you were looking for one of these items. On a scale of 1 to 7 where 1 is not at all important and 7 is very important…? [ROTATE, 8=(Don't know)]

How important is….
A. Price
B. Size or Fit
C. Operating cost or monthly energy cost
D. Brand
E. Quality
F. Features
G. Appearance
H. Energy efficiency

[ASK IF S1=1 and HALF OWNers]
A1. On the same scale of 1 to 7 where 1 is not at all important and 7 is very important, how important would the following things be in your decision about which CENTRAL AIR CONDITIONER, FURNACE, or WATER HEATER to purchase? [ROTATE, 8=(Don't know)]

How important is…
A. Price
B. Size or Fit
C. Operating cost or monthly energy cost
D. Brand
E. Quality
F. Features
G. Energy efficiency
H. Appearance

B. Awareness of Energy Saving Household Actions

B1. If someone had high energy bills in their home, what are THREE energy efficiency improvements that they might make to lower their energy bill?

B1a. Enter first response only. (IF NECESSARY: What is the first thing that you think of? If someone had high energy bills in their home, what energy efficiency improvement can you think of that they might make to lower their energy bill?)

00. Open text window
98. (Don't know) [SKIP TO C1A]

B1b. Enter second response. (IF NECESSARY: What <u>is the second</u> improvement? If someone had high energy bills in their home, can you think of a second energy efficiency improvement to lower their energy bill?)

00. Open text window
98. (Don't know) [SKIP TO C1A]

B1c. Enter third response. (IF NECESSARY: What <u>is the third</u> improvement? If someone had high energy bills in their home, can you think of any other energy efficiency improvement to lower their energy bill?)

00. Open text window
98. (Don't know)

C. **Concern Regarding Energy Efficiency/Attitudes**

C1. Please tell me if you agree or disagree with the following statements: (FOLLOW UP WITH: Is that strongly or somewhat? 1=strongly agree, 2=somewhat agree, 3=somewhat disagree, 4-strongly disagree, 5=don't know) [ROTATE][4]

A. I am not very concerned about the amount of energy used in my home.
B. The household consumer is such a small part of the whole energy consumption picture that it really doesn't matter how a household uses energy.
C. Everyone should make a real effort to save energy.
D. Energy saving has become a widespread practice in California.
H. Information and tips on how to save energy in my household are ***<u>easy</u>*** to find.
I. When looking to buy a product that uses energy, my household seeks out the most energy efficient product available

G. Actions Specific To Flex Your Power Messaging—Behaviors/Practices

G1. Does your household have any of the following? (1=Yes, 2=No, 3=Don't know)

A. Central heat
B. A window air conditioner
C. Central cooling
D. A Dishwasher
E. A Clothes washer

[ASK IF G1A=1]
G4a. Over the past 6 months, have you used central heating in your home?

1. Yes
2. No
3. (Don't know)

[4] C1 was drawn from the CBEE study conducted in 1999 by Hagler Bailly

[ASK IF G1C=1]
G4b. Over the past 6 months, have you turned on the air conditioning in your home?

1. Yes
2. No
3. (Don't know)

G2. Do you agree or disagree with the following statements… [1=Agree, 2=Disagree, 3=(Don't know)]: [ROTATE]

A. My household generally turns off the lights in unoccupied rooms to save energy [ASK ALL]
B. My household generally unplugs or turns off power adapters and appliances when not in use [ASK ALL]
C. My household generally makes sure that the dishwasher is full before running it [ASK if G1D = 1]
D. My household generally makes sure that the clothes washer is full before running it [ASK if G1E=1]
E. My household tries to take shorter showers to save energy or hot water. [ASK ALL]
F. [ASK IF G1A=1 OR G1B=1 OR G1C=1] My household tries to adjust the temperature of our thermostat to reduce our energy usage. (If you have a programmable thermostat, this could include setting your thermostat to automatically adjust during the hours when you are sleeping or not at home.)

["Took Behaviors" = IF (G2A=1 OR G2B=1 OR G2C=1 OR G2D=1 OR G2E=1 OR G2F=1) THEN 1, OTHERWISE 0]

[ASK IF "Took Behaviors"]

C. What are the top three things that motivated you to take these energy saving actions in your home? [OPEN END] (note to interviewer: write up to three different responses separated by commas)

F. Actions Specific To Flex Your Power Messaging—Lighting

[ASK ALL]
F2. I have a few questions about energy efficient lighting, such as compact fluorescent bulbs. Compact fluorescent bulbs, or CFLs, usually do not look like regular incandescent bulbs. The most common type of compact fluorescent bulb is made with a glass tube bent into a spiral, resembling a soft-serve ice cream, and it fits in a regular light bulb socket. How familiar are you with **energy saving compact fluorescent bulbs**? Would you say that you are…

1. Very familiar
2. Somewhat familiar
3. Slightly familiar
4. Not at all familiar before being read this description
5. (Don't know)

[ASK ALL, EVEN IF NOT FAMILIAR]
F5. Has your household purchased any CFLs since the beginning of the year, that is, in the past 6 months?

1. Yes
2. No
3. (Don't know)

[ASK IF F5=2, NO]
Q1b Has your household ever purchased a CFL?

1. Yes
2. No
3. (Don't know)

[ASK IF F5=2, NO]
Q2. Has your household purchased any light bulbs in the past 6 months?

1. Yes
2. No
3. (Don't know)

[ASK ALL, EVEN IF NOT FAMILIAR]
F7. Do you recall receiving any *free* CFLs in the past 6 months?

1. Yes
2. No
3. (Don't know)

[ASK ALL, EVEN IF NOT FAMILIAR]
Q3. Thinking of these CFLs and others that you might have had in storage, how many CFLs did your household install in the past 6 months (which would be since the beginning of 2008)? (IF NECESSARY: A rough guess is fine.)

96. (none)
0-50 [NUMERIC OPEN END]
[98. Won't answer even after being probed]

[SKIP IF Q3=0, 96, 98]
Q4. Did all of these replace standard incandescent bulbs?

1. Yes
2. No
3. (Don't know)

[ASK IF Q4=2]
Q5. How many replaced standard incandescent bulbs?

[SKIP IF Q3=0, 96]

A. What are top three things that motivated you to install these CFLs? [OPEN END] (note to interviewer: write up to three different responses separated by commas)

[ASK ALL]
Q6. On a scale of 1 to 7 where 1 is not at all likely and 7 is very likely, how likely are you to purchase CFLs in the future? [(8=Don't know)]

E. Actions Specific To Flex Your Power Messaging—High Cost Purchases

E1. Please indicate if your household purchased any of the following in the past 6 months. Has your household purchased… [1=Yes, 2=No, 3=(Don't know)]

a. A refrigerator
b. A clothes washer
c. A dishwasher
d. A furnace or boiler
e. A water-heater
f. A central air conditioner
g. A window air conditioner

[BY APPLIANCE ASK E2, E3, E4, and KR1 FOR EACH E1a-g=1]
E2a-g. Did you purchase the [INSERT A-G from E1] in the first part of the year (that is, January through March), or in the past three months?

1. First part of the year (January-March 2008); or four to six months ago
2. Past three months (April-June)

[NO DON'T KNOW. ASK RESPONDENT FOR BEST GUESS]

E3a-g. Did you purchase a model that was specifically promoted as using less energy than other similar [READ IN A-G]?

1. Yes
2. No
3. (Don't know)

[ASK E4 & KR1 FOR EACH E3a-g=1]
E4a-g. How did you know that the [READ-IN A-G] you purchased was energy efficient? (PROBE IF NEEDED: IS IT ENERGY STAR RATED?)
[OPEN END]

KR1a-g. Did you receive a rebate from your utility for this purchase?

1. Yes
2. No
3. (Don't know)

["Bought High-Cost Energy Efficiency Unit" = IF(E3A=1 OR E3B=1 OR E3C=1 OR E3D=1 OR E3E=1 OR E3F=1 OR E3G=1) THEN 1, OTHERWISE 0]

[ASK IF "Bought High-Cost Energy Efficiency Unit"]

B. What top three things motivated you to purchase this high efficiency product (or products)? [OPEN END] (note to interviewer: write up to three different responses separated by commas)

[ASK ALL]
E5. Do you have any plans to purchase a new appliance, furnace, water-heater, air conditioner or ceiling fan within the next year?

1. Yes
2. No
3. (Don't know)

[IF YES to plan to purchase a new unit, E5=1]
E6. What are you planning to purchase? (PROBE FROM LIST AS NECESSARY)

1. A new appliance such as a refrigerator, clothes washer, or dishwasher
2. A furnace
3. A water-heater
4. A central air conditioner
5. A window air conditioner
6. A ceiling fan

00. (Other, specify)
96. (Nothing)
98. (Don't know)

[ASK ALL]
E8. On a scale of 1 to 7, with 1 being very unlikely and 7 being very likely, how likely are you to consider energy efficiency in future purchases of appliances or major equipment for your home? (IF NECESSARY: An appliance, furnace, water heater or air conditioner.) [(8=(Don't know)]

EA. Awareness of Information Sources on Energy Saving Measures and Practices

EA1. If you were interested in knowing more about energy saving opportunities, where would you look for more information? (NOTE TO INTERVIEWER: PROBE FOR UP TO THREE INFORMATION SEEKING ACTIONS.)

1. (Utility Website)
2. (Library)
3. (Search Engine (i.e., google))
4. (Call utility 800 number)
5. (Call Flex Your Power (FYP) 800 number)
6. (Flex Your Power (FYP) website)
7. (Energy Star website)

00. (Other, specify)
96. (Not interested in knowing more)
98. (Don't know)

EA2. What websites, if any, would you visit to find information on energy saving tips or practices? [MULTIPLE RESPONSE, ALLOW UP TO 4 RESPONSES]

1. (Utility Website)
2. (Flex Your Power, FYP website)
3. (Energy Star website)

00. (Other, specify)
96. (None)
98. (Don't know)

EA3. What 800 numbers, if any, would you call to find information on energy saving tips or practices? [MULTIPLE RESPONSE, ALLOW UP TO 3 RESPONSES]

1. (Utility 800#)
2. (Flex Your Power, FYP 800#)

00. (Other, specify)
96. (None)
98. (Don't know)

I. Awareness of Flex Your Power

I1. Have you heard of any of the following? [ROTATE, 1=Yes, 2=No, 3=(Don't know)]

a. Good Housekeeping
b. Click it or Ticket
c. Ahnu
d. Flex Your Power
e. Flex Alert
f. Energy Hog
g. Galley Bay
h. Energy Star
i. Change a Light, Change the World

H. Exposure to Sources of Information

Now I want to ask you about some of the ways in which you might have seen or heard about energy efficiency or other energy saving opportunities. It is important for us to understand if you have or have not been exposed to these things so that we know how common this information is…

H1. Since the beginning of the year, the past 6 months, have you received information about energy saving opportunities from any of the following … [ROTATE, 1=Yes, 2=No, 3=(DK)]

A. From a **website**?
B. From an **email**?
C. From an advertisement **on television**?
D. From a **phone call *that you made* to your utility**?
E. From **your energy bill?**

F. From advertisements **on the radio**?
H. From **friends or family**?
I. From **local events** such as a festival or community fair or parade?
J. From a **community group or non-profit** agency in your community?
K. From **articles in the newspaper**?
L. From **advertisements in the newspaper**?
M. From your utility through the **mail**, such as in a newsletter?

A. General Prevalence of Energy Efficiency Related Issues in the Market

A4. On a scale of 1 to 7, where 1 is "Not at all" and 7 is "Very frequently," in the past 6 months, how frequently have you heard or read about things that you could do to reduce energy use in your home? This could include purchasing energy efficient appliances, light bulbs, or changing behaviors. [8=(Don't know)]

H6. Are you aware of any of the following energy saving opportunities? [ROTATE CHOICES; 1=Yes, 2=No, 3=(DK)]

A. Rebates and incentives from your utility for energy efficient appliances or for making home improvements
D. Energy Audits of your home to find ways to save energy
E. The Flex Your Power website, fypower.org
F. Your electric or gas utilities' website for energy saving information

Q7. Since the beginning of the year, have you participated in an energy saving utility program such as a rebate program?

1. Yes
2. No
3. (Don't know)

[ASK IF Q7=2, 3]
Q8. On a scale of 1 to 7, with 1 being very unlikely and 7 being very likely, how likely are you to participate in a utility energy saving program in the future? [8-Don't know]

J. Exposure Specifically to Flex Your Power Messaging, Aided (2007 Winter Ad Descriptions) [ASK CALIFORNIA ONLY]

[ASK ALL]
J1. Have you ever seen or heard advertisements that fit the following descriptions: [ROTATE, 1=Yes, 2=No, 3=(DK)]

A. A series of advertisements from your local utility with the tagline "**Save Money, Save Energy, Save the Environment**"?

[Have you ever seen or heard…]

B. Advertisements saying that household energy use is a major contributor to global warming and that each of us can make a difference by taking simple steps to reduce

energy use at home. The print advertisements feature close-up images of children or animals and the radio advertisements discuss the impact of global warming on children. Both use taglines like **"Can changing your thermostat change the climate?" or "Can changing your furnace change their future?"**

[Have you ever seen or heard …]

C. Advertisements featuring children and their parents or grandparents talking about leaving behind a California with droughts, floods, and excessive heat. The advertisements feature the parent or grandparent promising to reduce the impact of global warming in the future for their children and grandchildren. All ads feature the tagline "**Global Warming is a Choice**" and use examples like "**If every California household chose to replace five regular lights with energy efficient light bulbs, it would be like taking 400,000 cars off the road**"?

V. Level of Influence

[ASK THIS SERIES IF H1C=1 OR H1F=1 or H1L=1]
You mentioned earlier that you had seen television, radio or newspaper ads that specifically promoted energy saving opportunities.

V1. Did the television, radio or newspaper ads provide you with <u>new</u> information?
1. Yes
2. No
3. (Don't Know)
4. (Refused)

V3. On a scale of one to seven where one is "not at all" and seven is "very much," how much did the television, radio or newspaper ads cause you to want to make changes in how you behave regarding energy use in your home?
8. (Don't Know)
9. (Refused)

KI2a. On a scale of one to seven where one is "not at all" and seven is "very much," how much did the television, radio or newspaper ads increase your awareness of actions to save energy in your home**?** (8=Don't know)

KI3a. Using that same scale, how much did the television, radio or newspaper ads cause you to think differently about how you can save energy in your home? (8=Don't know)

KI4a. And again with one being "not at all" and seven being "very much",how much were the television, radio, or newspaper ads a good way to explain the importance of saving energy in your home? (8=Don't know)

L. Psychographics - Attitudes towards Energy Efficiency and Self-Efficacy

L2. I would like to read you a series of statements. On a scale of 1 to 7, with 1 being strongly disagree and 7 being strongly agree, how would you rate the following statements:

a. I believe that global warming is occurring.
b. I believe that household energy has an impact on global warming and climate change.

Q9. Would you say that your household has…

1. **NOT** made any changes to save energy
2. made **SOME** changes, but there is more that you could do, or
3. made **ALL** of the energy saving changes that you could make
4. (Don't know)

X. Demographics[5]

We're almost finished. I just have a few questions about your household to make sure we're getting a representative sample of utility residents.

X2. In what type of building do you live? (READ LIST IF NEEDED)

1. (A mobile home)
2. (A one-family house detached from any other house)
3. (A one-family house attached to one or more houses)
4. (A building with 2 apartments)
5. (A building with 3 or 4 apartments)
6. (A building with 5 or more apartments)

00. (Other, Specify)
98. (Don't Know)
99. (Refused)

X3. About when was this building first built? *(READ LIST IF NEEDED)*

1. (Before 1978)
2. (Between 1978 and 1992)
3. (Between 1993 and 2000)
4. (Between 2001 and 2004)
5. (2005 or later)
6. (Don't Know)
7. (Refused)

X4a. How many square feet of living space are there in your residence, including bathrooms, foyers and hallways? (Exclude garages, unfinished basements and unheated porches.)

1. Less than 500
2. 501 - 1000
3. 1001 - 1500

[5] X1 in the intro (on renters/owners) is part of the standard demographic battery

4. 1501 - 2000
5. 2001 - 2500
6. 2501 - 3000
7. Greater than 3000
8. (Don't Know)
9. (Refused)

[ASK IF X4a. = 8 or 9]

X4b. How many full or half bathrooms do you have in your home? (PROBE: A full bathroom is one that has a sink with running water, and a toilet, and either a bathtub or shower. A half bathroom has either a toilet or a bathtub or a shower?)

____ Bathrooms
98. (Don't Know)
99. (Refused)

[ASK IF X4a. = 8 or 9]

X4c. How many bedrooms do you have in your home (If a one-room efficiency, or studio apartment, bedrooms=0)

____ bedrooms
98. (Don't Know)
99. (Refused)

[ASK IF X4a. = 8 or 9]

X4d. Other than bedrooms and bathrooms, how many other rooms are there in your home? Do not count laundry rooms, foyers, unfinished storage spaces, porches, or garages.

____ Other rooms
98. (Don't Know)
99. (Refused)

X5. Including yourself, how many people currently live in your home year-round?

_____ people
98. (Don't Know)
99. (Refused)

[ASK ALL]

X6. Which of the following best describes your age?

02. 18 or 19 years old
03. .20-24 years old[6]
04. 25-34 years old
05. 35-44 years old
06. 45-54 years old
07. 55-64 years old
08. 65 or older
98. (Don't Know)
99. (Refused)

[6] We changed some of these categories to match the categories of the data tables on the American FactFinder website for the 2006 American Community Survey.

X8. What is the highest level of education you have completed?

1. No schooling [DON'T SHOW]
2. Less than high school
3. Some high school
4. High school graduate or equivalent (e.g., GED)
5. Some college, no degree
6. College graduate degree
7. Graduate or professional degree

00. (Other, Specify)
98. (Don't Know)
99. (Refused)

X9. Which of the following best represents your annual household income from all sources in 2007, before taxes? Was it . . . .? *(READ)*

1. Less than $25,000[7]
2. $25,000-34,999
3. $35,000-49,999
4. $50,000-74,999
5. $75,000-99,999
6. $100,000-149,999
7. $150,000-199,999
8. $200,000 or more
9. (Don't Know)
10. (Refused)

X9A. Are you of Hispanic, Latino, or Spanish origin?

1. Yes
2. No
3. (Don't Know)
4. (Refused)

X10. What is your ethnicity?[8] [MULTIPLE RESPONSE, ALLOW UP TO 5 RESPONSES]

1. White
2. Black or African American
3. American Indian or Alaska Native
4. Asian Indian
5. Chinese
6. Japanese
7. Korean
8. Vietnamese

[7] We changed the "less than $20,000" category to be "less than $25,000" to match the categories of the data tables on the American FactFinder website for the 2006 American Community Survey.
[8] Changed from "race" to "ethnicity"

9. Filipino
10. Other Asian
11. Native Hawaiian
12. Guamanian or Chamorro
13. Samoan
14. Other Pacific Islander
00. (Other, Specify)
98. (Don't Know)
99. (Refused)

Q10. What is your zip code?

Thank you for your time.

C. VERIFIED REACH THROUGH IMMI PANEL SURVEY

C.1 Detailed Program Findings Memo

MEMO

To: CPUC (for utility and implementer comment)

From: Opinion Dynamics Evaluation Team

Re: Draft: Verified Reach (IMMI Analysis) Indirect Impact Evaluation Interim Feedback Memo

Date: 04/14/09

Summary of Findings

Through our IMMI analysis, the Opinion Dynamics team measured and analyzed the impact of the Flex Your Power-General (FYPG) program's TV and radio reach and frequency build on a representative panel in the Los Angeles DMA over the 2008 summer season. We sought to determine two primary things: (1) if the FYPG program is meeting its stated reach and frequency goals among its target audience; and (2) whether or not we have evidence that the FYPG program's messaging could be having an *effect* on CFL purchase intention or behavior. We found the following:

Is the FYPG program meeting its stated reach and frequency goals among its target audience?

- The FYPG program is effectively meeting its reach build goals at 88% reach build over the campaign season. While this is less than its annual stated reach build goal of 95%, it can be surmised that program would meet this goal if other media formats were measured and if the winter campaign was included in this analysis.
- Due to measurement limitations, it is less clear whether the program is meeting its frequency build goals. However, the Opinion Dynamics team is less confident that other media formats and the winter season would increase the program's frequency build of 8.9 average exposures per person to its stated annual goal of 35 average exposures per person.
- The FYPG program defines its primary target audience as homeowners ages 35-64 with high household incomes ($50,000+). Our results indicate that 92% of those in the 35-54 age group were exposed to the FYPG program by the end of the 2008 summer campaign as compared to 77% in the 18-24 age group. In addition, 92% of homeowners were exposed to a FYP ad, compared with 85% of renters. Finally, panelists earning $60,000 or more (94%) were reached more than those earning less than $60,000 (85%).

Is there evidence of a relationship between FYPG's Messaging and CFL Purchase Intent and Behavior?

- The Flex Your Power program appears to be having an impact on CFL purchase consideration. Reach build was shown to have a statistically significant relationship with one's likelihood to purchase a CFL in the future. This indicates that there is a relationship between FYPG messaging exposure and CFL purchase consideration.
- In contrast, there was no statistically significant relationship with reach build and the actual purchase of a CFL. This may be due to a series of factors: (1) studies indicate that the relationship between purchase intent and actual purchases is weak; (2) the sample sizes of this study were too small to indicate a relationship between purchase behavior and exposure; and (3) there may not have been enough time between exposure and our survey for participants to *need* to purchase or replace CFLs.[1]
- Frequency build was shown to have a statistically significant relationship with recall of the FYPG brand name, indicating that frequent messaging exposure could increase brand and messaging awareness. This finding is backed by general consensus on the value and impact of frequent messaging exposure.

Methodology

For this study, the Opinion Dynamics team analyzed IMMI's TV and radio spot advertisement data for the June to September 2008 summer campaign season in the Los Angeles DMA.[2] We conducted two primary data collection efforts with IMMI: (1) monitoring and verification of panelists' exposure to FYPG TV and radio spot advertisements for the 2008 summer campaign season (June-September); and (2) a post-campaign survey with panelists (November-December 2008). Table 1 provides the sample sizes for each of these efforts.

Table 1. Final Number of Panelists Ages 18-54 by Effort

	Panelists in Compliance	Exposure Analysis	Survey Analysis
Sample Size	360	319	182

The Opinion Dynamics team determined statistical significance using the following tests: chi-square tests, ANOVA, Fisher's exact test, z-tests for two proportions, and independent sample t-tests (where appropriate). P-values of less than 0.10 are considered statistically significant.

[1] Note that two other survey efforts, the CFL (Structural Equation Modeling) Survey and the Tracking Survey, will provide additional insight and findings to points 1-3 in our final indirect impact report.

[2] This analysis excludes the extended 2007 winter campaign (spanning into January-March 2008), which served as the FYPG 2008 winter campaign. Note that the IMMI technology only measures TV and radio spot advertisements and excludes the following media formats that FYPG deploys and also counts towards their reach and frequency goals: (1) TV and radio traffic ads, sponsorships, and weather reports; (2) outdoor media; and (3) online banner advertisements. Thus, our findings for this study should be considered the program's outcomes *at a minimum*.

Key Terms for IMMI Analysis

Throughout this memo, we use a number of key terms:

- **Reach:** the percentage of panelists who were exposed to at least one FYP ad.
- **Frequency:** the average number of times that panelists were exposed to a FYP ad *per individual month*.
- **Reach build:** cumulative reach over the course of a year at a given point in time; as the year goes on, a panelist is counted as exposed in a month if they were exposed in that month or any preceding month that year.
- **Frequency build:** cumulative number of times each panelist was exposed at a given point in time (the number of times in that month plus the number of times in the preceding months) divided by the number of panelists. Note, reach build and frequency build figures do not decline, but rather stay constant or increase over time.

Detailed Findings

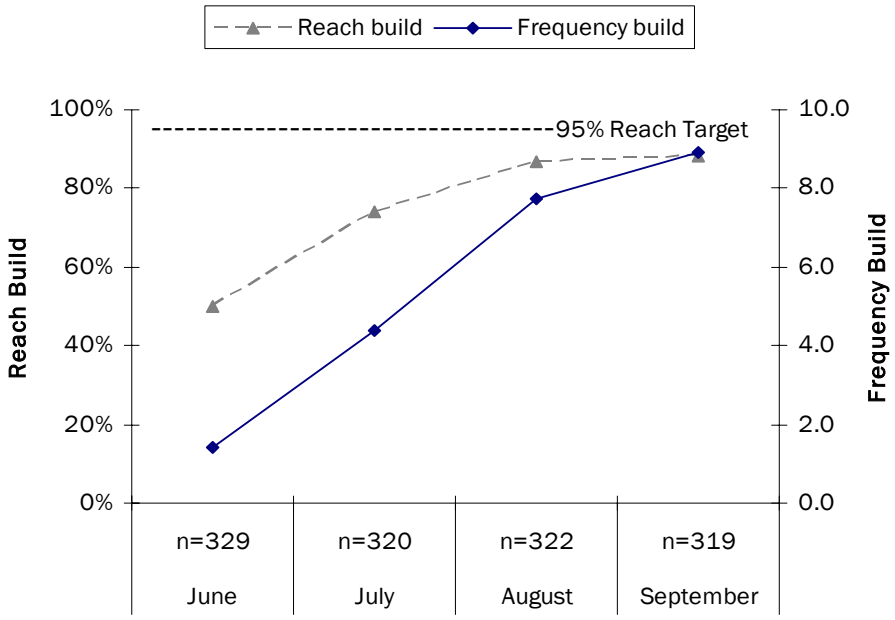
Reach and Frequency Build Analysis: 2008 Summer Campaign Season (May-June)

Using the data gathered from IMMI media monitoring, the Opinion Dynamics team set out to establish whether the FYP program met its stated reach and frequency build goals during 2008 summer campaign. The FYP program stated its reach and frequency build goal for the *entire* campaign year (including both the summer and winter campaign seasons), and for 2008, was a reach of 95%, with a frequency build of 35.

Exposure to FYP messaging: Reach and Frequency Build

Figure 1 illustrates the reach and frequency build figures for the FYP program. While the reach figures show the percentage of panelists broadly touched by the advertisements, the frequency values indicate the level at which exposure occurs. This is also important as higher frequency figures indicate, all else equal, a greater likelihood the panelists will retain the message and may take action.

Figure 1. Exposure to FYP Over the Summer Campaign Season in LA DMA: Reach and Frequency Build



The reach build figures show that over the course of the summer campaign, the FYPG program reached 88% of the panelists, coming close to reaching the 95% goal it set for the entire 2008 campaign. Furthermore, if the study were to account for other media formats, it is likely that the FYPG program would come close to, or meet, its reach build goal of 95%. This figure is on par with *all of* 2007, which included the winter gas season, whose year-end reach build was 85%. This figure indicates that the FYPG program reach for entire 2008 campaign likely exceeded the reach build for the entire 2007 campaign year.

In addition, the FYPG program's 2008 summer frequency build values indicate that panelists were exposed an average of 8.9 times over the course of the summer. Again, this figure is greater than the 2007 year-end frequency at 6.9 views per person. Note we do not include a number of media formats in this study. However, the frequency build of 8.9 is still low compared with the program's stated frequency build goal of 35. Thus, this information should be used as one data point in determining the overall frequency build. As stated previously, our data does not include respondent exposure to billboards, on-line banner advertisements, and radio/TV drop in announcements during weather and other segments. In addition, the FYPG program does not state its goals by media format. As such, verification analysis cannot be conducted for each discrete media format.

Reach and Frequency Analysis by Media Format

The Opinion Dynamics team analyzed our IMMI data by media format: TV and Radio. The below graphs illustrate that more people were touched by FYP TV messaging than the FYP radio messaging over the course of the summer campaign. By the end of the summer campaign, 81% percent of panelists had been exposed to FYP TV messaging, while only 47% were exposed to the radio messaging. Further, panelists were exposed an average of 8 times to TV messaging and an average of 5.5 times to radio messaging.

Figure 2. Exposure to FYP Television Messaging Over the Summer Campaign Season in LA DMA: Reach and Frequency Build

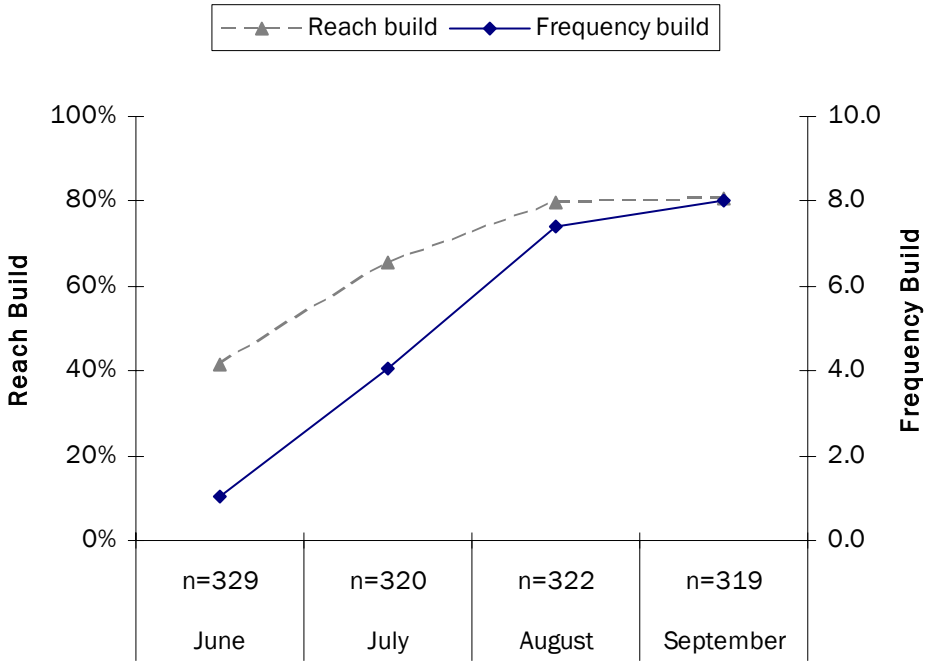
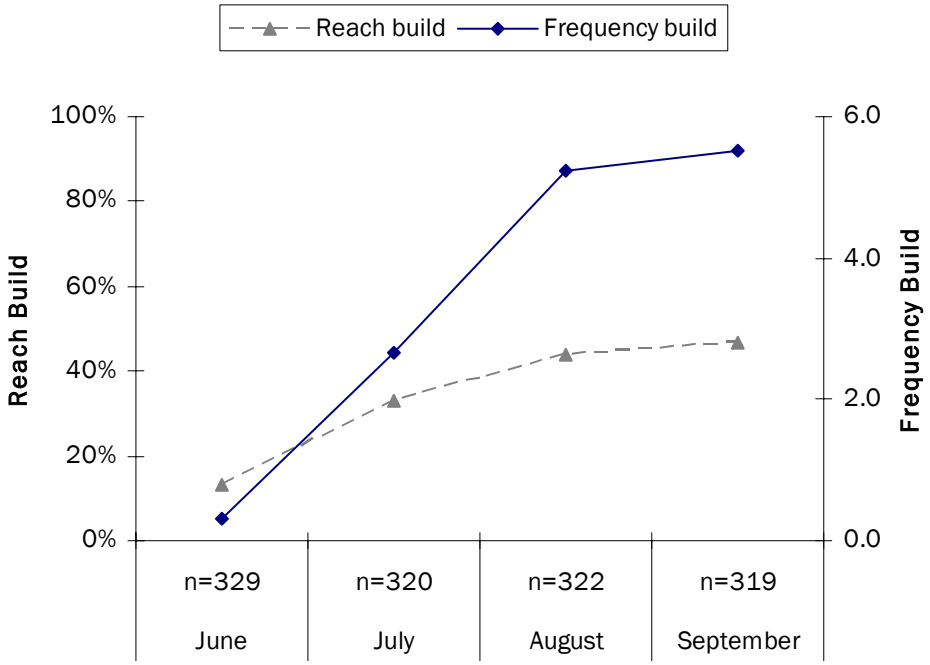


Figure 3. Exposure to FYP Radio Messaging Over the Summer Campaign Season in LA DMA: Reach and Frequency Build



While these findings do not account for paid announcements and other radio ads, there is a clear discrepancy in the programs reach and frequency between the two formats.

In our process evaluation, we noted that radio advertisements are typically utilized to increase frequency, as it is a less expensive format for this outreach goal. Here, it appears that the program is garnering the bulk of its reach and frequency from TV over radio. This indicates that the program's media buy allocations to radio may be negatively affecting the overall frequency figures, and thus should be reconsidered to garner a greater frequency over the course of the campaign season.

Reach Build and Frequency Build for Different Demographic Groups

Here, we explore the degree to which the FYP program is reaching its stated target audience by examining whether there is a relationship between exposure to FYPG and a series of demographic variables. The FYPG campaign defines its target audience for program years 2006-2008 as California residential customers (including homeowners and renters) between the ages of 35 and 64. The target audience is further defined as married, educated (having a Bachelor's degree or more), and earning a household income of over $50,000. Two additional subsets of the target audience were also identified: adults 25-34 and "influentials/opinion leaders." Furthermore, the FYPG program skews its media buys towards women (meaning that media buys were biased towards outlets that are more frequently watched by women). To assess the FYPG program's efficacy in targeting these populations in the LA DMA, we examined the program's reach and frequency build for the following variables: age, gender, homeownership, and income. The table below shows the reach and frequency build values for the variables on which FYP program sets targets.

Table 2. Reach and Frequency Build Values by Demographic Targets for the 2008 Summer Season

	Reach Build	Frequency Build
Age		
18-24	77%	6
25-34 **(secondary target)**	87%	6
35-54 **(primary target)**	92%[a]	11[b]
Gender		
Male	86%	9
Female **(target)**	89%	9
Homeownership		
Own **(target)**	92%[c]	10
Rent or lease	85%	8
Income		
$60,000 or more[3]	94%[d]	9
Less than $60,000	85%	9

[a]This percentage for this group is statistically significantly higher than the percentage for ages 18-24.

[b]This value is statistically significantly higher than the values for ages 25-34 and 18-24.

[c]This percentage for this group is statistically significantly higher than the percentage for renters.

[d]This percentage for this group is statistically significantly higher than the percentage for those with incomes less than $60,000.

Our team then compared the individual categories of age with each other and found that the program's reach and frequency build was appropriately aligned based on their stated age targets. Compared with the age group that was not the target (those aged 18-24), the percentage of those exposed in the primary target group (those aged 35-54) was significantly higher. Seventy-seven percent of adults aged 18-24 saw at least one ad, compared with 92% of those in the 35-54 group (primary target). Further, those in the primary target group (35-54) had a significantly higher frequency build than both those in the secondary target group (25-34) and the 18-24 group.

In addition to age, we found a statistically significant relationship between homeownership and reach build. Ninety-two percent (92%) of homeowners were exposed to a FYP ad, compared with 85% of those who rent or lease. Again, these findings indicate that the program has effectively targeted homeowners more than renters.

We found a statistically significant relationship between income and reach build, but not income and frequency build. Panelists earning less than $60,000 had a reach build of 85%

[3] Note that the break $60,000 was used because our panelists data did not have a choice category for household income that allowed us to break at $50,000.

compared with 94% for those earning $60,000 or more, thus indicating that the FYPG program is effectively targeting individuals with a higher household income.[4]

Our analysis found no relationships between gender and reach build, and no difference in frequency build by gender.

Impact of Flex Your Power Messaging Reach Build (Exposure)

The Opinion Dynamics team sought to determine the potential impacts of the FYPG program on a series of behavioral outcomes. Namely, we assessed the potential impact of the Flex Your Power program on the following:

- Likelihood to purchase CFLs (intent)
- Purchase of a CFL
- Visiting the Flex Your Power website
- Recall of the Flex Your Power advertisements

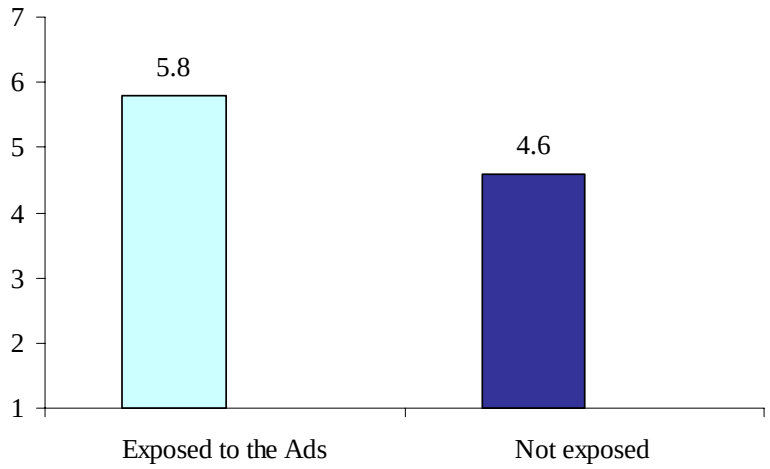
The Opinion Dynamics team conducted a series of statistical tests (which are defined in the methods section) and found two statistically significant relationships between exposure to the Flex Your Power program messaging and outcomes: (1) Likelihood to purchase CFLs (intent); and (2) Recall of the Flex Your Power advertisements. We discuss these findings below.

Relationship between Exposure and Likelihood of Purchasing CFLs

Respondents were asked about their likelihood of purchasing CFLs in the future, on a scale of 1 to 7 where 1 is not at all likely and 7 is very likely. We found a statistically significant relationship between exposure to the ads and likelihood of purchasing CFLs.

[4] Note due to limitations in data reporting for panelists' demographics, we could not dichotomize the data at the $50,000 point.

Figure 2. Mean Likelihood of Purchasing CFLs by Exposure
(7=Very Likely to Purchase)



Relationship between Exposure and Recall

Respondents were asked whether they had heard of Flex Your Power, as a proxy for their recall of the Flex Your Power advertisements. The Opinion Dynamics team found a statistically significant relationship between exposure to Flex Your Power messaging and recall. Our results are outlined in the table below.

Table 3. Panelists who Recalled the FYP Name and their Exposure Status

Exposure Status	Number of Panelists who Recalled FYP Name	Percentage who Recalled FYP Name
Exposed to FYP messaging	147	92% [a]
Not exposed to FYP messaging	13	72%
Total	160 [b]	

[a] This value, the percentage of exposed who recalled the name, is statistically significantly higher than the percentage of non-exposed who recalled the name.

[b] The 160 here is the number of panelists who recalled the FYP name.

Statistically Insignificant Results for Exposure

Our analysis found no statistically significant relationships between exposure and the following outcomes:

- Purchase of a CFL[5];
- Visiting the Flex Your Power website;
- Ability to cite an energy efficiency improvement that would result in lower bills; and
- Ability to cite an improvement relating to conservation that would lower bills.

It is important to note that, although we could not identify a statistically significant relationship between reach build and the actual purchase of a CFL, it does not indicate that the relationship does not exist. Our findings on likelihood to purchase a CFL and exposure to messaging indicate that the program may be having some influence on purchase *consideration.* If this analysis could be conducted on a larger sample of the Los Angeles DMA, the significance of these relationships may change.[6]

In addition, the program's sizable coverage of the panel may have an impact on these findings. As demonstrated in the reach and frequency build section of this memo, the FYPG program's reach build (overall exposure) was high at 88%. Due to the sizable population "touched" by the program, our sample size for those not exposed to the messaging was small (n=18) and may have affected the number of statistically significant relationships between exposure to program messaging and behavioral outcomes.

While the results were not statistically significant, we examined the data and found some indication that exposure to the messaging may have an effect on all of these cases. Our results are shown in the table below.

Table 4. Exposure to FYP Messaging and Other Trends

Exposure Status	Visited FYP website	Could name one EE improvement	Could name one Conservation Improvement
Exposed to FYP messaging	10%	73%	79%
Not exposed to FYP messaging	5%	72%	72%
Total	10%	73%	79%

The Opinion Dynamics team will further explore the relationship between exposure to the messaging and visits to the Flex Your Power website in our other survey efforts for the indirect impact evaluation.

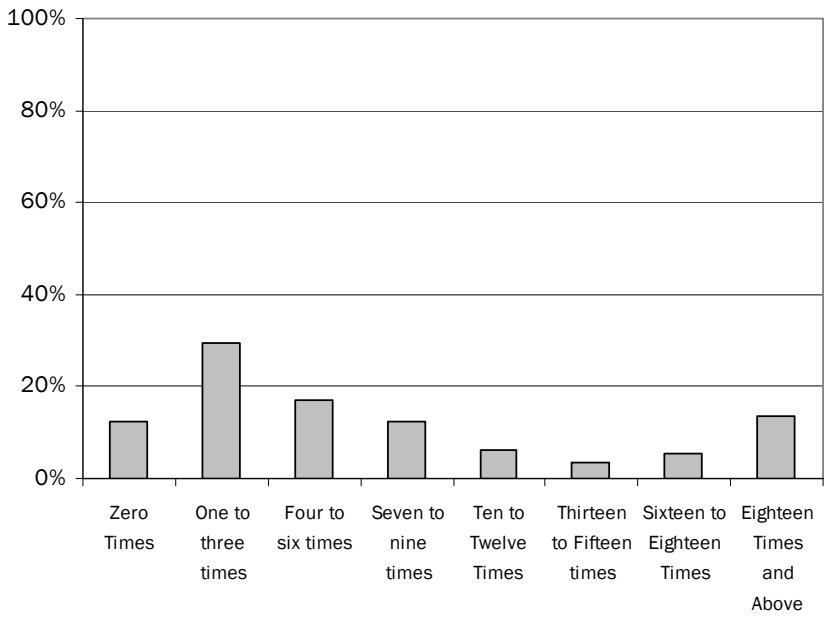
[5] This analysis was only done on respondents who purchased a light bulb.

[6] Note that our SEM data indicated a modest relationship between intent to purchase an CFL and the actual purchase of a CFL. The actual relationship between stated likelihood or intent to take action is widely debated. However, the greater the sample size, the more likely a researcher will be able to find a statistically significant relationship if, when, and where it exists. Our SEM findings are forthcoming.

Impact of Frequency Build (Intensity of Exposure) to Flex Your Power Messaging

In addition to evaluating the effect of exposure to the FYPG messaging, the Opinion Dynamics team sought to test whether the intensity of exposure (based on frequency build) had an effect on four potential outcomes: (1) Likelihood to purchase CFLs; (2) Actual purchase of CFLs; (3) Visiting the Flex Your Power website; and (4) Recall of the Flex Your Power advertisements. This analysis was done only on those who were exposed to the messaging. When we examined the frequency of exposure across all panelists, we found that the majority of panelists were exposed four-six times or less (see table 4).

Figure 4. Breakdown of Panelists by Number of Times Exposed



To analyze the effects of frequency on the aforementioned outcomes, we created two categories to indicate intensity of exposure: exposed to a Flex Your Power TV or radio advertisement less than or equal to 4 times over the summer season, and exposure to a Flex Your Power TV or radio advertisement more than 4 times over the summer season.[7] In this analysis, we found a statistically significant relationship between intensity of exposure and recall of the Flex Your Power advertisements. The figure below demonstrates panelists' average frequency of exposure over the campaign season.

[7] We chose to divide this at four as it divided the respondents roughly in half.

Relationship between Intensity of Exposure and Recall

The Opinion Dynamics team found a statistically significant relationship between intensity of exposure and recall of the advertisements. Ninety-four percent (94%) of those exposed more than four times recalled the messaging compared with 85% of those who were exposed four times or fewer.

Table 5. Intensity of Exposure and Recall of FYP Name[1]

Intensity of Exposure	Recalled FYP Name	Did not Recall FYP Name	Total
Exposed four times or fewer	85%	15%	100%
Exposed more than four times	94%	6%	100%

[1]The relationship between intensity of exposure and recall of the FYP name is statistically significant.

Statistically Insignificant Results for Intensity of Exposure

Although no statistically significant relationships were found in the remaining cases, by examining the data we found some indication in all cases that intensity of exposure could have an effect on all outcomes tested. The results are outlined in the table below.

Table 6. Intensity of Exposure and CFL Purchase Intention, Purchase Behaviors and Visits to the FYP Website

Intensity of Exposure	Mean Likelihood to Purchase CFLs (7=Very likely to purchase)	Percentage who Purchased a CFL in the Past Four Months	Percentage who Visited the FYP website
Exposed four times or fewer	5.6	79%	7%
Exposed more than four times	5.8	81%	10%
Total	5.7	81%	9%

Compared with respondents exposed less than or equal to 4 times, a higher percentage of respondents exposed more than four times purchased a CFL and visited the FYP website. Respondents exposed more than 4 times also had a higher mean score on the likelihood of purchasing a CFL scale. While these findings are not statistically significant and we cannot definitely say a relationship exists, our findings show some indication that there may be a relationship between intensity of exposure and the other outcomes.

Using IMMI Verified Reach to Adjust FYP Recall Bias

As outlined in our evaluation plan, one of the primary rationales for conducting this study was to develop a recall adjustment for our general population surveys. In our tracking study, the Opinion Dynamics team is determining exposure to the Flex Your Power program based on recall of the Flex Your Power brand. However, our tracking study cannot adjust for recall bias. Since IMMI provides a unique opportunity to verify exposure to program message, our team can develop a method to factor out false negatives and false positives. The table below outlines four recall scenarios by comparing our exposure data and our IMMI survey findings.

Table 7. Flex Your Power Brand Recall Bias Based on Verified Exposure[1]

Recall	Exposure	Percent of population	Accuracy of Recall	n	Percent of Recall Group
State that do NOT recall advertisement	Are not exposed	3%	TRUE	5	28%
	Are exposed	7%	FALSE Negative	13	72%
State that DO recall advertisement	Are not exposed	7%	FALSE Positive	13	8%
	Are exposed	83%	TRUE	147	92%

[1] The total n here adds to 178 – the remaining panelists selected "don't know" to whether or not they recalled the ad.

As this analysis demonstrates, using the Flex Your Power name as a proxy for exposure has an inherent recall bias. However, this can be readily adjusted by factoring out the ratio of false negatives and false positives. This adjustment, as outlined below, may be used throughout our general population studies, such as the tracking survey, to gain a more accurate picture of the population's exposure to the Flex Your Power program.

Table 8. Example showing Recall Bias Adjustment

Key Question:			
If we use recall of the Flex Your Power brand name as a proxy, how many respondents can we estimate were truly exposed to the program?			
Example Distribution of Flex Your Power Recall:			
1,000	People asked about taglines		
200	Say they don't recall		
800	Say they do recall		
Ratio of Recall Based on Exposure:			
200 Do Not Recall the Flex Your Power Brand		800 Recall the Flex Your Power Brand	
72%	Do not recall but are exposed	8%	Do recall but are not exposed
28%	Do not recall and are not exposed	92%	Do recall and are exposed
Final Adjustments Based on Exposure and Recall Ratios:			
120	Not exposed	(200*.28 + 800*.08)	
880	Exposed	1,000 – 120	

Using this adjustment, our evaluation team will be able to more accurately represent the FYPG program reach in our general population surveys.

C.2 Data Collection Instrument

Memorandum

To: IMMI

From: ODC (Contact: Mary Sutter or Anne Dougherty)

Date: November 24, 2008

Re: Questions from ODC for IMMI survey

(QS Question set is for LA market only)
Since the fourth of July, have you purchased (1) an incandescent light bulb, or (2a) compact fluorescent light bulb (CFL)? [IF Necessary – A CFL often is a spiral or squiggly looking bulb, while most incandescent bulbs look like a more traditional light bulb. Some CFL's are shaped like normal bulbs but have a bigger base.]

1. Incandescent Bulb
2. Compact Fluorescent Bulb (CFL)
3. Have not purchased light bulbs
4. Refused
5. Don't Know

[ASK ALL]
QS3. On a scale of 1 to 7 where 1 is not at all likely and 7 is very likely, how likely are you to purchase CFLs in the future?

[ASK ALL]
QS4. Have you ever heard of any of the following? [ROTATE, 1=Yes, 2=No, 3=(Don't know)]

a. Click it or Ticket
b. Flex Your Power
c. Flex Alert
d. Energy Hog
e. Energy Star
g. Change a Light, Change the World

[ASK ALL]
QS6. In the past have you . . . [1=Yes, 2=No, 3=(Don't know)]

A. Seen or heard advertisements about energy efficiency or energy saving opportunities **on television?**
B. Heard advertisements about energy efficiency or energy saving opportunities **on the radio?**

[IF QS6 =1 for A or B]
QS7**.** You indicated that you have seen or heard about energy efficiency ads on television or radio. On a scale of 1 to 7 with 1 being "very little exposure" and 7 being "a lot of exposure", how much exposure have you had to these types of advertisements?
{If Necessary} When we say "very little exposure" we mean that you have seen/heard/or read the advertisements once before but cannot recall much more than that. When we say " a lot of exposure" we mean that you have seen/heard/or read the advertisements many times and can readily recall or describe the ads.

[ASK ALL]
QS8. Since July 4th, have you gone online to the website flexyourpower.org?

1. Yes
2. No
3. Don't Know

B1. If someone had high energy bills in their home, what are THREE energy efficiency improvements that they might make to lower their energy bill?

B1a. Enter first response only. (IF NECESSARY: What is the first thing that you think of? If someone had high energy bills in their home, what energy efficiency improvement can you think of that they might make to lower their energy bill?)

00. Open text window
98. (Don't know)

B1b. Enter second response. (IF NECESSARY: What <u>is the second</u> improvement? If someone had high energy bills in their home, can you think of a second energy efficiency improvement to lower their energy bill?)

00. Open text window
98. (Don't know)

B1c. Enter third response. (IF NECESSARY: What <u>is the third</u> improvement? If someone had high energy bills in their home, can you think of any other energy efficiency improvement to lower their energy bill?)

00. Open text window
98. (Don't know)

H6. Are you aware of any of the following energy saving opportunities? [ROTATE CHOICES; 1=Yes, 2=No, 3=(DK)]

A. Rebates and incentives from your utility for energy efficient appliances or for making home improvements
D. Energy Audits of your home to find ways to save energy
E. The Flex Your Power website, fypower.org
F. Your electric or gas utilities' website for energy saving information

Friends/Family use of CFLs

F1. How many of your friends and family currently use CFLs in their home?

1. None of my friends and family
2. A few of my friends and family
3. About half of my friends and family
4. Most of my friends and family
5. All of my friends and family
6. I do not know

[SKIP F2 IF F1=1 OR 6]
F2. As far as you know, do they like them?

1. All or most do
2. Some do and some don't
3. No, they do not like them
4. I do not know if they like them or not

[ASK ALL]
F3. If you had to guess, how many of your friends or family members are likely to use CFLs in the future?

1. None of my friends and family
2. A few of my friends and family
3. About half of my friends and family
4. Most of my friends and family
5. All of my friends and family
6. I do not know

F3a. In the past 12 months, have any of your friends or family members encouraged you to purchase CFLs?

1. Yes
2. No
3. Don't know/Do not recall

F4. How much does your household pay attention to your utility bills to track the amount of electricity you are using?

1. A lot – I/we look at them in detail each month
2. Some – I/we usually look at them
3. A little –I/we will look at them once in a while
4. None – I/we do not pay any attention to our utility bills

Product Barriers

PB1. How would you rate the availability of CFLs in the stores you shop at? [INSERT BREAK]
Please use a 1-7 scale where 1 means "Very Poor" and 7 means "Very Good"

Very Poor						**Very Good**
1	**2**	**3**	**4**	**5**	**6**	**7**
○	○	○	○	○	○	○

PB2. Please indicate the extent to which you agree/disagree with the following statements. [INSERT BREAK]
Please use a 1-7 scale where 1 means "Strongly Disagree" and 7 means "Strongly Agree."
[RANDOMIZE LIST]

Strongly Disagree						**Strongly Agree**	**Don't Know**
1	**2**	**3**	**4**	**5**	**6**	**7**	**0**
○	○	○	○	○	○	○	○

A. CFLs last longer than incandescent light bulbs.
D. CFLs can take longer to turn on.

PB3. Please indicate the extent to which you agree/disagree with the following statements. [INSERT BREAK]
Please use a 1-7 scale where 1 means "Strongly Disagree" and 7 means "Strongly Agree."
[RANDOMIZE LIST]

Strongly Disagree						**Strongly Agree**
1	**2**	**3**	**4**	**5**	**6**	**7**
○	○	○	○	○	○	○

A. CFLs are not worth the extra cost.
B. I am concerned about how to dispose of CFLs.
D. My lighting needs are not met by CFLs.
E. I find it difficult to install CFLs due to the limitations of my fixtures (the CFLs don't fit).
F. I just do not like CFLs.
G. As far as I am aware, using CFLs instead of incandescent light bulbs will not save more money.

DEMOGRAPHICS

S1. Do you own or rent your home?

1 Own
2 Rent or lease
00. (Other, Specify)
98. (Don't know)
99. (Refused)

X8. What is the highest level of education you have completed?

1. No schooling [DON'T SHOW]
2. Less than high school
3. Some high school
4. High school graduate or equivalent (e.g., GED)
5. Some college, no degree
6. College graduate degree
7. Graduate or professional degree
00. Other, Specify
99. (Refused)

X9. Which of the following best represents your annual household income from all sources in 2007, before taxes? Was it . . . .

1. Less than $25,000
2. $25,000-34,999
3. $35,000-49,999
4. $50,000-74,999
5. $75,000-99,999
6. $100,000-149,999
7. $150,000-199,999
8. $200,000 or more
99. (Refused)

PO2. What is your political party affiliation? Please select one.

1. Strong Republican
2. Moderate Republican
3. Leans Republican
4. Independent/Other
5. Leans Democrat
6. Moderate Democrat
7. Strong Democrat
8. Don't Know
99. (Refused)

D. ASIAN-LANGUAGE NEIGHBORHOOD BASED SURVEYS

D.1 Detailed Program Findings Memo

MEMORANDUM

TO: CPUC (for utility and implementer comment)

FROM: The Opinion Dynamics Corporation

DATE: April 14, 2009

RE: Draft FYPE Neighborhood-Based Asian Language Research

The purpose of this memo is to provide interim findings from our Neighborhood-Based Asian Language study of the Statewide Marketing and Outreach program's Ethnic outreach efforts. This effort is led by the Kobayashi Maru Group on behalf of Efficiency Partnership. Flex Your Power- Ethnic (FYPE) disseminates print, radio, and TV advertisements in four different languages: Chinese (Mandarin and Cantonese), Korean, Vietnamese and Spanish. For this effort, we examined the effects of the FYPE program's Chinese, Korean, and Vietnamese language outreach. We chose not to focus on Spanish language outreach for this effort as it is currently being evaluated and measured through Opinion Dynamics' Tracking study.

These findings will be used to adjust our general population survey efforts, namely SEM and Tracking. In particular, this study will give insight into the awareness and energy saving actions of Asian-language speakers and help to gain a sense of the FYPE program's influence in the market relative to FYP's other outreach efforts. In addition, we will examine these findings in terms of households reached among the program's target DMAs.

Summary of Findings

The primary goal of the FYPE program is to motivate its target audience to take energy saving actions, namely through the purchase of energy efficiency measures. In our analysis, we found that those exposed to the FYPE program reported purchasing CFLs (32%) and energy efficient appliances (19%) in statistically greater numbers than those who were not exposed (23% and 8% respectively).

In addition, we found markedly different awareness levels among the exposed and unexposed. Namely, those exposed to the program cited statistically greater numbers of energy efficiency actions when asked to name top of mind actions that would reduce their energy costs. Further, those who were exposed to FYPE could recall energy saving opportunities, including rebates, IOU websites, FYP website, and home energy audits in statistically greater numbers than those who were not exposed.

Also, the FYPE program is demonstrating high reach among its targets in the Los Angeles and San Francisco DMAs. This appears to be paying off in high levels of exposure to the FYPE messaging, with 76% of those intercepted indicating that they were exposed to at least one FYPE advertisements. When we examine these three metrics together (purchase

behavior, awareness of energy efficiency, and the program's reach), we find that the FYPE program occupies an important role among these language groups and is positively influencing their decisions around energy use.

Further, when we examine the FYPE program's overall influence, as a marketing and outreach campaign, on energy efficiency awareness and purchase behaviors among those exposed, we find a very high level of influence index at .76 on a range of potential influence from 0-1.[1] This finding, combined with statistically greater rates of energy efficiency awareness and purchases among the exposed indicates that the FYPE program is having a discernable effect on its target audience.

What is the reach of the Flex Your Power Ethnic media efforts?

The Opinion Dynamics team assessed the reach of the FYPE program by overlaying circulation figures on population density maps for each target language in the Los Angeles and San Francisco DMAs. We found the following:

- The FYPE program is effectively covering the most densely populated Chinese areas in the Los Angeles DMA and in most of the San Francisco DMA. However, there is the potential to expand efforts in the Southeastern Bay Area, including the cities of Hayward, Union City, and Fremont, to more adequately cover the target audience.
- Overall, FYPE covers the Korean market well, but could expand to a few densely populated areas in the Los Angeles DMA, namely in the Burbank region.
- Among Vietnamese markets in the Los Angeles and San Francisco DMAs, the program is effectively covering most of the area but could expand into the San Jose area in the San Francisco DMA and near Pomona and West Covina in the Los Angeles DMA.

For the final report, we will examine these findings in terms of households reached to better determine the FYPE program's reach relative to other FYP efforts and to add insight into the programs potential effects across all groups statewide.

How likely is the FYPE program to induce behavioral change?

We determined the likelihood of the FYPE to induce positive energy efficiency behavior change. To do so, we asked respondents if the program provided new information. Additionally, we developed a level of influence using a series of questions aimed at assessing the FYPE's influence on a CFL or energy efficient appliance purchase decision. We found the following:

[1] This level of influence index is comprised of a series of questions to determine the overall effect of the FYPE program on a purchase decision. This is explained in greater detail on page 17.

- Of those who were exposed to the FYPE program, 86% indicated that the program messaging provided them with new information. Learning new information can be a precursor to changes in awareness, attitudes and behavior.
- The FYPE program has a high level of influence (.76 in a range 0-1) among those who were exposed to the program's messaging, indicating that the messages, when examined by themselves, may be highly influential.

What is the change in awareness of energy saving opportunities as a result of program efforts?

One aim of the FYPE program is to raise awareness of its target audience of the specific energy efficiency actions they can take to reduce their energy bills. Our findings indicate that those who are exposed to the FYPE messaging have statistically greater rates of awareness than those respondents who were not. We found the following:

- Overall, those exposed to FYPE messaging cited energy efficiency and conservation actions in statistically greater numbers than those who were not exposed to the messaging.
- In addition, those who were exposed to FYPE messaging cited more energy efficiency-specific actions to save energy than those who were not exposed (a mean of .75 energy efficiency responses to .53.
- Finally, those exposed to FYPE messaging were more aware of energy saving opportunities including rebates, IOU websites, FYP website, and home energy audits.

Did those exposed to the program change their behaviors?

Ultimately, the FYPE program aims to influence the purchase of energy efficient measures among those who are exposed to its messaging. Overall, we find that those who are exposed to the FYPE messaging reported statistically more energy efficiency purchases that those who were not.

- Those respondents exposed to the FYPE messaging purchased energy efficient appliances in greater numbers than those who were not exposed (19% vs. 8%).
- In addition, those exposed to the FYPE (31%) program cited purchasing a CFL in statistically significant greater numbers than those who were not exposed (23%).

Note that we may not calculate energy savings for this particular survey effort because our data was collected through a convenience sample, which has inherent biases. As such, these findings cannot be extrapolated to the general population. However, as the aforementioned findings suggest, there is evidence of behavior change.

Researchable Issues and Methodology

The FYPE program disseminates TV, radio, and print advertisements during the Summer Lighting and Cooling campaigns. The program also has in-language pages on the FYP

website. The program has promoted CFLs and energy efficient air conditioners in 2006 and 2007, and added energy efficient appliances to its 2008 campaign efforts.

To provide insight into FYPE's potential program effects for this effort, our team surveyed Californians who speak Chinese, Korean, and Vietnamese in the both the San Francisco and Los Angeles Designated Media Areas (DMAs). We aimed to answer the following researchable issues: (1) What is the reach of Flex Your Power's Asian language media efforts?; (2) How likely are the Statewide Marketing and Outreach programs to induce behavioral change among the targeted audience?; (3) What is the change in awareness of energy saving opportunities as a result of program efforts?; and (4) Did individuals exposed to the FYPE program change their behaviors as a result of the program efforts? In addition to answering these researchable issues, the Opinion Dynamics evaluation team also compared the programs' effects on these Asian language groups with our general and Spanish-speaking population findings from our tracking survey to add greater context to our data.

To answer the aforementioned researchable issues, the Opinion Dynamics evaluation team conducted intercept surveys during the weekends of September 26-28 and October 4-5 in the San Francisco and Los Angeles DMAs. Note, this was completed just after the 2008 summer campaign season. The next section provides details of the intercept survey method. For each DMA, our team sought to complete 100 intercept interviews for each of the following populations: Chinese-speaking (including both Cantonese and Mandarin speakers), Korean-speaking, and Vietnamese-speaking individuals. The table below shows our target number of completes by language and DMA as well as our final sample (n) for each.

Table 1. Target and Actual Completes of Intercept Study by Language

		Chinese	Korean	Vietnamese	Total
Los Angeles DMA	Target	100	100	100	300
	Actual	100	100	104	300
San Francisco DMA	Target	100	100	100	300
	Actual	100	100	100	300
Total		**200**	**200**	**204**	**604**

Selecting Intercept Locations

To determine the neighborhoods our sites for intercept survey, the Opinion Dynamics team used three primary neighborhood selection criteria: (1) concentration of FYPE media dissemination; (2) population density of Asian language targets; and (3) location of commerce centers to ensure high-volume traffic of the target sample.

The first selection criteria for choosing the neighborhoods for our intercept survey was choosing a location for intercepting that had a high concentration of FYPE media messaging.

To do this, the Opinion Dynamics team obtained a list of zip codes where FYPE messages were disseminated in Chinese, Korean and Vietnamese communities.[2]

Secondly, we chose neighborhoods with the greatest population density of FYPE's target audience. The Opinion Dynamics team used the U.S. Census to determine the areas in both San Francisco and Los Angeles most densely populated with FYPE's target language groups.

The third criterion was to determine cross streets within the San Francisco and Los Angeles DMAs that serve as ideal locations for intercept surveys. To determine these cross streets, the ODC team had six main criteria that are as follows:

- Accessibility to pedestrian traffic
- Ease of stopping pedestrians and space to interview (benches, open areas, etc.)
- Close proximity to retail shops, restaurants, cafes, office buildings, parks and recreational areas. Made sure to allow enough distance from the places of business as to not interfere with patrons or the course of business
- Highly visible areas
- Ensure safety for interviewers

With these parameters in mind, the Opinion Dynamics team selected the final sites for intercept surveys. A zip code and city list of intercept sites is provides in the appendix.[3]

Methods for Intercepting

The Opinion Dynamics team conducted the intercept research by approaching individuals that spoke the target language. Interviewers spoke the target language when intercepting potential respondents. Those who could not or did not speak the language were not selected to participate. To make a special effort to try not to introduce any age or gender bias, the Opinion Dynamics field researchers took special care to target a wide variety of ages and an equal representation by gender.

The interviewers approached the potential respondent and asked if he or she would like to fill out a short survey for a $5 Target gift card. Once respondents agreed to take the survey, interviewers were instructed to administer the questionnaire. This method was favored over self-administered so that we could reduce survey error and eliminate most skipped/missed questions. To ensure that the interviewers could properly administer the survey, they were fully trained on the survey instrument. Respondents were given the $5 gift card once the survey was complete.

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[2] The zip code list was gathered from print and broadcast media. The print outlets provided their paper's distribution sites and the broadcast media provided their top coverage areas. The zip code list does not necessarily indicate that all three media (print, radio, and TV) were used in all geographic areas.

[3] In some cases, the densely populated regions were also highly residential neighborhoods, and we elected to survey at sites of high traffic and commerce as these are ideal conditions for finding people to fill out the surveys.

Detailed Findings

FYPE Reach among its Target Audiences

To assess the FYPE program's reach among its target audiences, the Opinion Dynamics team generated maps using Arc View. The maps layered FYPE's circulation zip codes over population density of FYPE target groups (e.g. Chinese, Korean, and Vietnamese-speaking individuals) in the Los Angeles and San Francisco DMAs. Population density is represented in shades of gray-black. FYPE circulation areas are represented in red cross-hatching. Our analysis of FYPE's coverage among its target audiences follows. Due to limitations in Census data, we used ethnicity as a proxy for language use. The following table outlines the percent of the California population that speaks the target language within the target ethnic group.

Table 2. Percent of Californians who Speak the Target Language by Ethnic Group[4]

	Chinese	Korean	Vietnamese
Percent of ethnic group who speak the target language	81%	83%	85%

Given the high percent of native language speakers within each ethnic group, the use of ethnicity is an appropriate proxy for language use.[5]

Geographic Reach among Chinese-Speaking Population

Overall, the FYPE program has wide coverage in Chinese-speaking areas in both Los Angeles and San Francisco. When we compare coverage between DMAs, the Chinese market in Los Angeles had greater coverage in the more densely populated areas than the San Francisco DMA. When we examine the San Francisco market closely, we find that the FYPE program could expand its coverage into a select number of densely populated areas seen in the Figure 2 picture that FYPE, namely in the Southeastern Bay, in the cities of Hayward, Union City, and Fremont. Maps of these findings may be found in Figure 1 and Figure 2.

Geographic Reach among Korean-Speaking Population

The FYPE campaign has sufficiently covered the geographic areas of Korean-speaking Californians in the San Francisco and Los Angeles DMAs. In general, Los Angeles has a much higher Korean (ethnicity/language) density than San Francisco. The Flex Your Power

[4] Note these figures were drawn from two questions from the 2007 Census by dividing the n of the population who speaks the target language in home by the n of the population who belongs to the ethnic group. Because these were two separate questions, these finings are estimates, not exact Census figures of individuals who speak the language at home of their ethnic origin.

[5] . Note for our final effort, we will translate these findings to total number of households who speak each language to better determine the potential effects of the program statewide. We are currently working to obtain these figures by DMA.

Ethnic campaign has wide coverage over the Los Angeles Korean market and appears to have covered the more densely populated regions (26%-100%). The maps indicate a few small to moderately dense areas (6%-25%) that aren't reached by FYPE in the Burbank area. The Korean population in the San Francisco DMA has been sufficiently covered by the FYP program. These findings are represented in Figure 3 and Figure 4.

Geographic Reach among Vietnamese-Speaking Population

Like their coverage in densely populated Korean areas, the FYPE campaign appears to have covered most of the Vietnamese population in both the Los Angeles and San Francisco DMAs. However a few pockets in the San Francisco DMA (northwest and southeast of San Jose) and the Los Angeles DMA (near Pomona and West Covina) are not covered by the program. These findings are represented in Figure 5 and Figure 6.

Figure 1. FYPE Coverage by Chinese Population Density, Los Angeles DMA

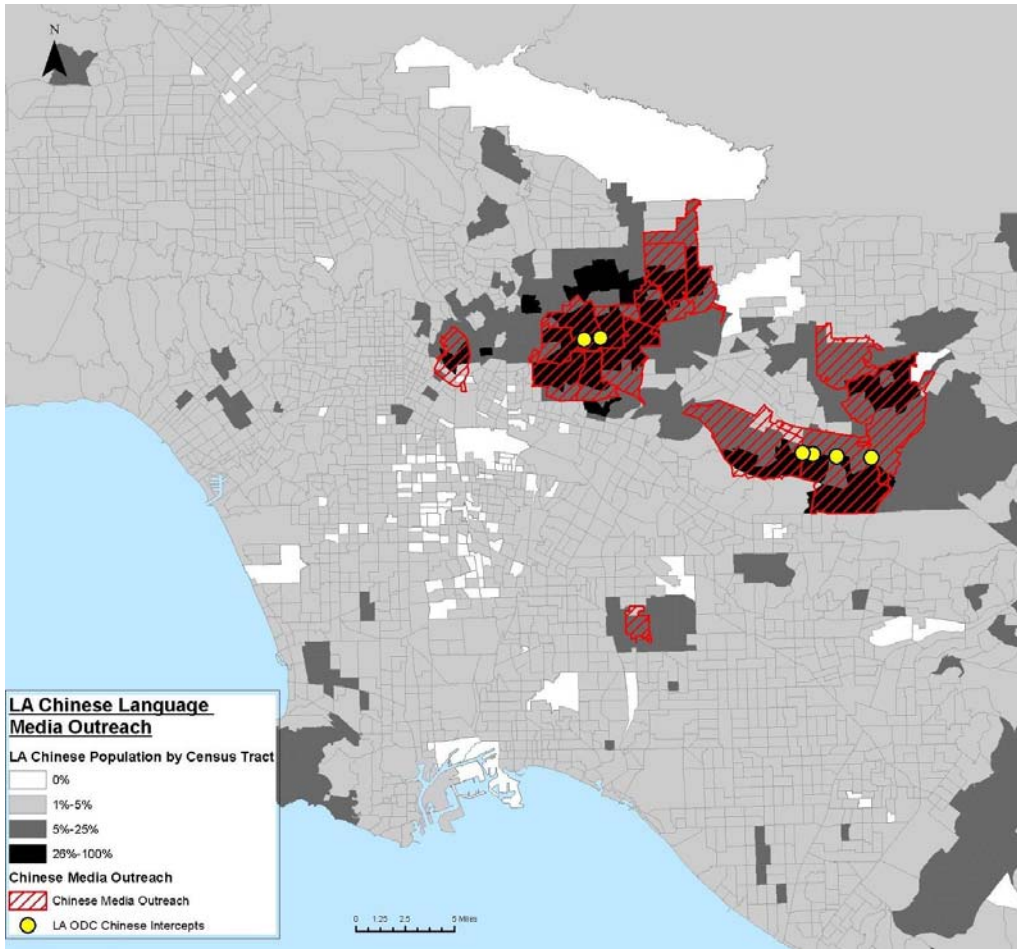


Figure 2. FYPE Coverage by Chinese Population Density, San Francisco DMA

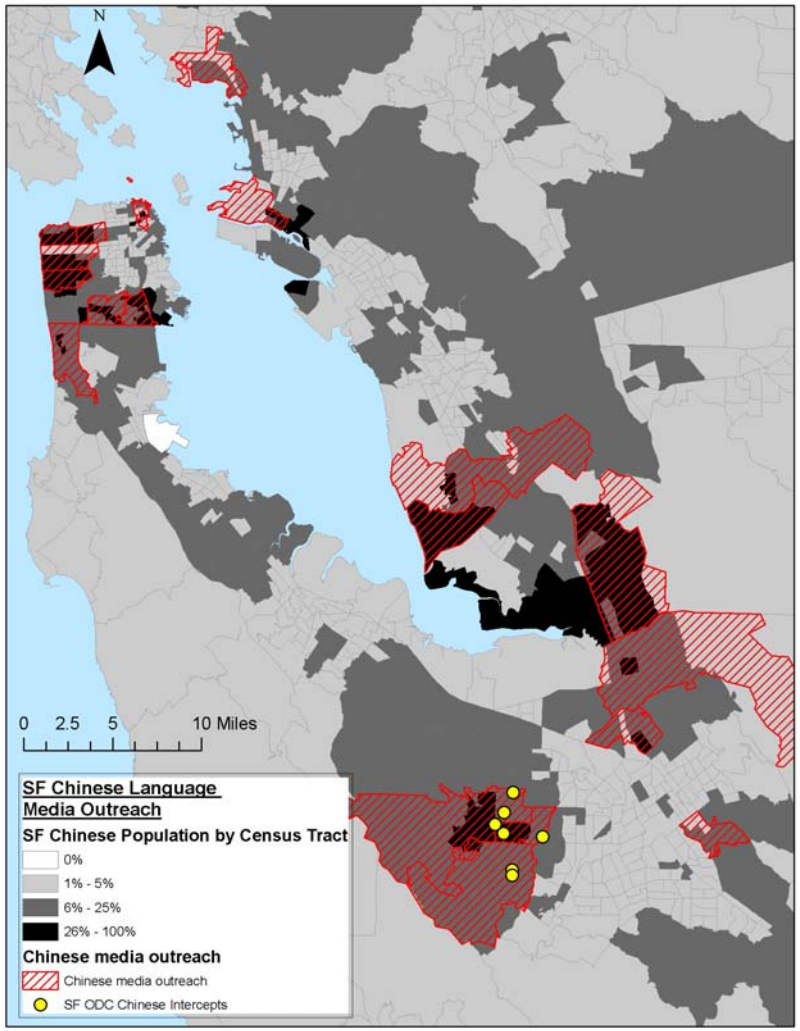


Figure 3. FYPE Coverage by Korean Population Density, Los Angeles DMA

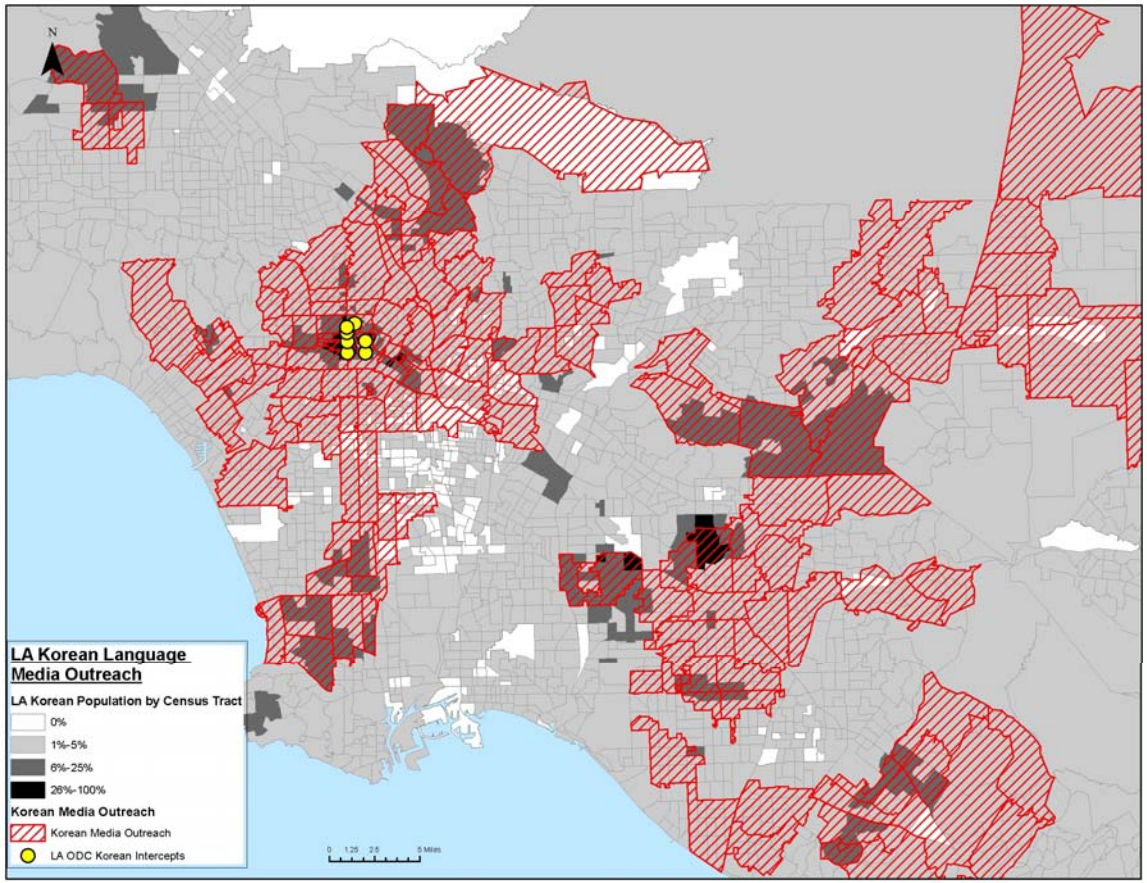


Figure 4. FYPE Coverage by Korean Population Density, San Francisco DMA

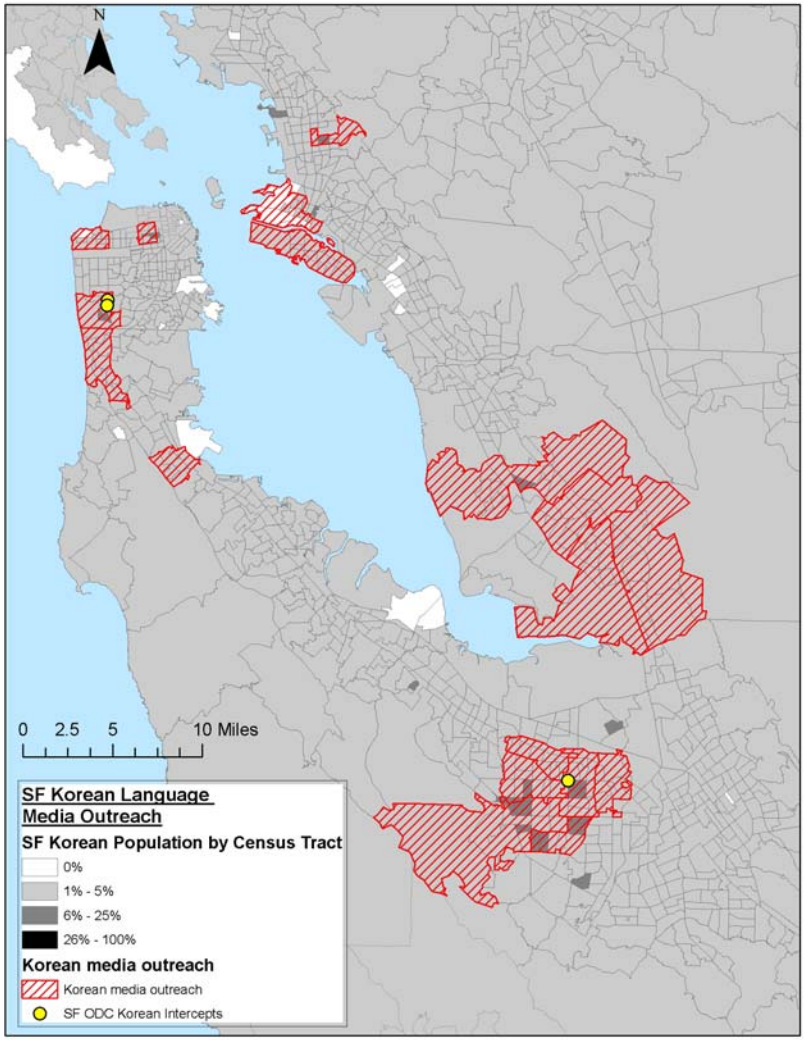


Figure 5. FYPE Coverage by Vietnamese Population Density, Los Angeles DMA

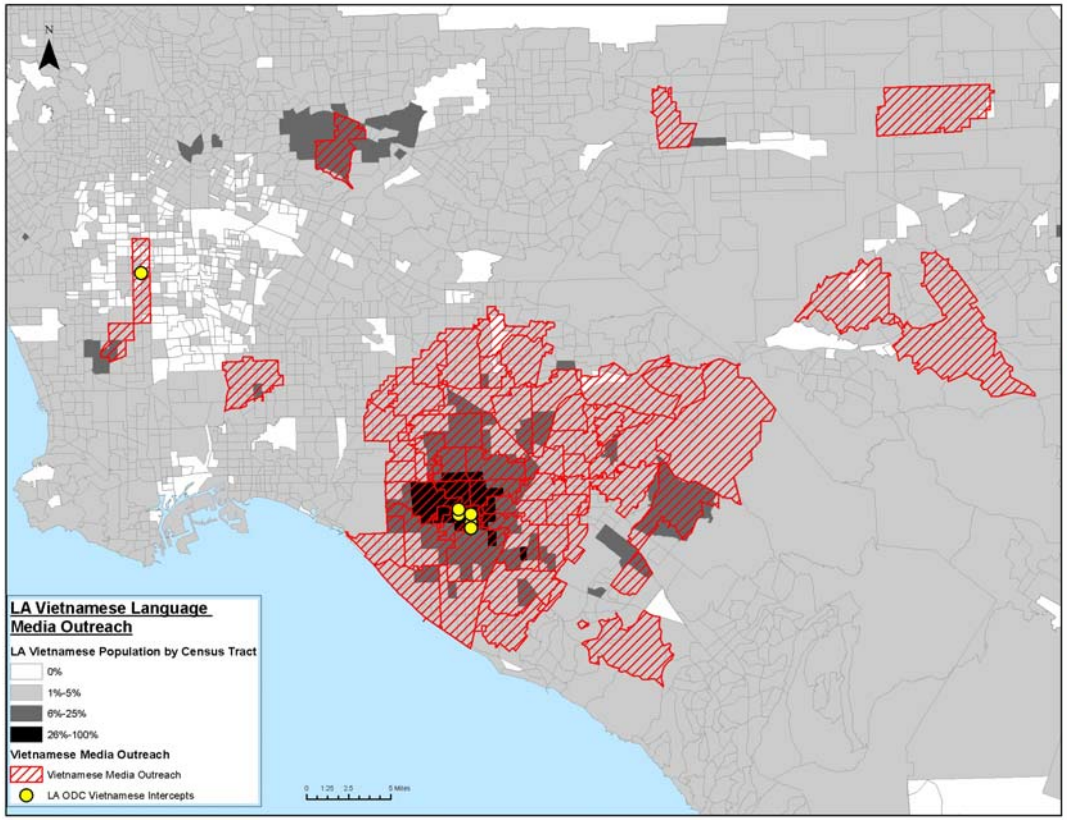
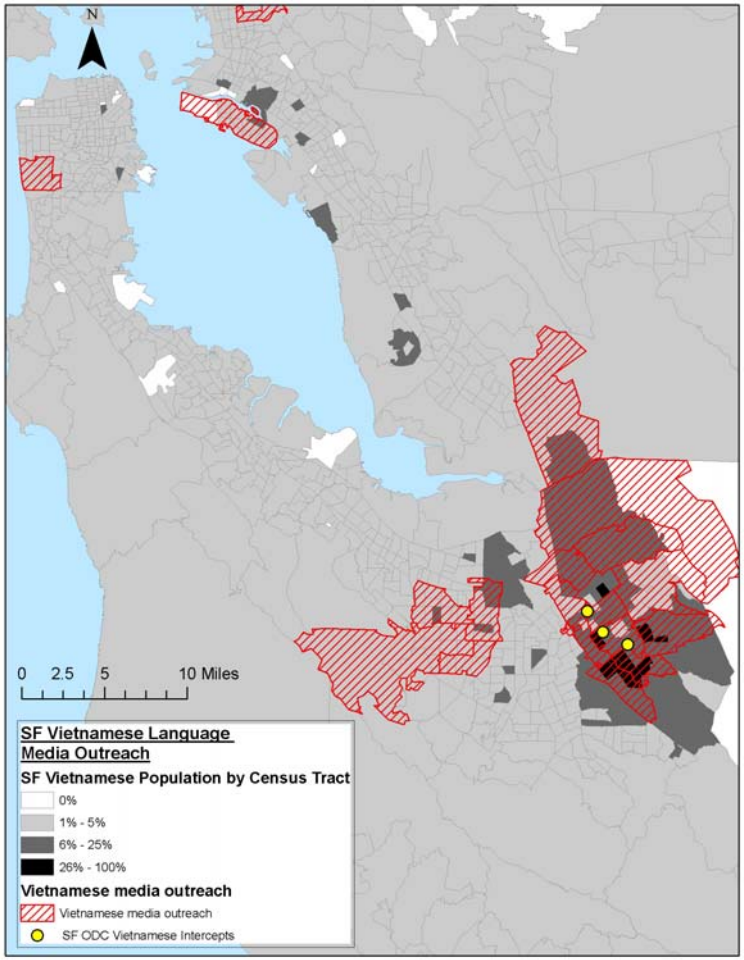


Figure 6. FYPE Coverage by Vietnamese Population Density, San Francisco DMA



Awareness of Flex Your Power Brand Name

To assess the reach of the program based on awareness levels, the Opinion Dynamics team measured Flex Your Power (FYP) name recognition among the FYPE target audience. It is important to note here that the FYPE program *does not* translate the FYP brand name for its in-language advertising because is generally frowned upon in marketing and brand strategy. As such, the English brand name is used throughout the FYPE (and Spanish) advertisements to promote FYP name recognition in a similar fashion as the English-language advertisements. Here we examine the awareness of the FYP name among the FYPE target group (We also examined awareness of FYPE ads, described below, which may be a better indicator for this population).

To add a context to our findings for Asian languages, we benchmarked our findings against other languages (English and Spanish) and against other energy programs to add context to these findings. Overall, the FYPE target audience (henceforth Asian language-speaking) is less aware of energy efficiency program names than the English-speaking population.

Table 3. Recall of Energy Efficiency Programs by Language Group

	English	Spanish	Asian Languages Total
ENERGY STAR	**77%**[sa]	50%	48%
Flex Your Power	**72%**[sa]	47%	43%
Flex Alert	**47%**[sa]	**28%**[a]	22%

Bolded numbers indicate a statistically significant difference among the comparison group indicated in the superscript. Super script "a" equals Asian languages; superscript "e" equals English; and the superscript "s" equals Spanish.

When we examine recognition of the FYP name among Asian language-speaking respondents, we find that awareness is low at 43%. Further, when we examine differences in awareness across languages for other prominent energy marketing and outreach programs, such as ENERGY STAR and Flex Alert, we find similar disparities across language groups.

Awareness of FYPE Advertisements

In addition to measuring FYP name recognition, our intercept surveys tested actual exposure to FYPE advertisements. The Opinion Dynamics team showed respondents images from TV and print advertisements, and read a script of radio advertisements to determine if the respondent has been exposed to any of the program's messaging. Recall of FYPE advertisements is high, with 76% of respondents indicating that they have been exposed to at least one advertisement.

Table 4. Recall of Flex Your Power Asian Language Advertisements

	Asian Languages Total
Aware of no advertisements	24%
Aware of one or more advertisements	76%
Total who were aware of both radio and TV advertisements	23%

In addition, our findings indicate that aided questioning of messaging exposure prompted greater recall when compared to the FYP name alone. When we look across all Asian language-speakers, 76% of respondents indicated that they had been exposed to at least one FYPE message, as compared to 43% who recognized the FYP name. Thus, respondents may not be associating the FYP brand name with the advertisements they were exposed to.

Impact of the FYPE Program on EE Awareness

To assess the FYPE program's impact, we provide our findings two ways: (1) assessing differences in key metrics between those who are exposed to the FYPE program versus those who are not exposed; and (2) comparing Asian language-speaking respondents against Tracking's Spanish- and English-speaking respondents to provide overall context for our findings. The former provides insight into the impact of FYPE's campaign efforts specifically among its target audience. Accounting for the brand awareness issues discussed in the previous section, we define "exposure" as those respondents who recalled seeing at least one FYPE advertisement. This is the focus of our impact evaluation analysis. The latter is included to provide additional value to the CPUC and program implementers by examining FYPE's target audience against the English and Spanish language groups. Note these findings will be brought together with our English and Spanish findings to better capture the behaviors of the state in our final report.

Is the FYPE Providing New Information?

While overall awareness of the FYP name and messaging provides an indication of the program's reach, it does not provide insight into the program's potential to raise awareness of energy saving actions and opportunities. Among those who recalled the FYPE messaging, 86% indicated that the messaging provided them with *new* information. This figure is statistically greater that both the English (44%) and Spanish (66%) speaking respondents. One hypothesis explaining these differences may be due to the Asian-language population's relatively low exposure to targeted energy efficiency programs in California. Currently, the Opinion Dynamics team is only aware of the PACE, CLEO, and CARE programs that provide energy efficiency services and outreach to this population, although we recognize that some resource acquisition programs may disseminate translated information. Thus, it is likely that the FYPE program is serving to educate Asian-language speakers with new energy saving facts, a group who is otherwise less exposed to this type of information. While it is clear that

the FYPE program is providing new information, we also sought to determine what effects the program is having on energy efficiency awareness and actions.

Awareness of Energy Saving Actions

Differences by Exposure to FYPE Advertisements

The FYPE program uses Asian language advertisements to promote energy efficiency measures to its target audience. To assess awareness of energy saving actions, we asked respondents if they could recall "the three energy efficiency improvements that they might make to lower their energy bill." In order to determine if the FYPE program was raising awareness on energy efficiency specifically, we examined if there was a difference among the exposed in citing energy efficiency versus conservation actions top of mind.

Table 5. Energy Efficiency versus Conservation Knowledge

	Asian Languages	Exposed	Not Exposed
Total Energy Efficiency Responses Given Top of Mind	55%	**58%**^{n}	44%
Total Conservation Responses Given Top of Mind	75%	**78%**^{n}	68%

Bolded numbers indicate a statistically significant difference among the comparison group indicated in the superscript. Super script "n" equals not exposed; superscript "e" equals exposed

Table 6. Recall of Energy Efficiency Suggestions by Language Group

	Asian Languages	Asian Exposed	Not Exposed
0 suggestions	45%	42%	56%
1 suggestion	40%	42%	35%
2 suggestion	14%	16%	9%
3 suggestions	0%	0%	0%
Percent	99%	100%	100%
Mean	.70	**.75**^{n}	.53

Bolded numbers indicate a statistically significant difference among the comparison group indicated in the superscript. Super script "n" equals not exposed; superscript "e" equals exposed

Overall, those who are exposed to the FYPE messaging can cite more top of mind energy conservation and energy efficiency action than those who are not exposed. In addition, we find trends in exposed respondents' ability to cite, on average, more energy efficiency

actions. Specifically, those who are exposed to FYPE messaging, on average, were able to top of mind recall and average of .75 energy efficiency actions, compared to those who were not exposed (.53). [6]

Differences by Language Group

When we examine the specific actions cited among FYPE's target audience, we find that different actions are recalled by different language groups. Here, we compare Asian-language respondents' top eight responses to those of the English and Spanish Tracking respondents. FYPE target measures are indicated by the double-barred boxes in the responses categories the table below.

Table 7. Energy Saving Actions Cited by Language Group

Action Cited	English	Spanish	Asian Languages
Install efficient lighting-Replace incandescent bulbs with CFLs	42%	36%	**45%^{S}**
Turn off lights when you leave a room	41%	61%	41%
Unplug and turn off power adapters and appliances with standby mode when not in use	12%	23%	26%
Purchase energy efficient appliances	**17%^{S}**	7%	**17%^{S}**
Use appliances less	2%	14%	15%
Reduce AC-Heater use (open windows)[7]	N/A	N/A	15%
Use less gas-energy-electricity in general	12%	23%	9%
Use less hot water-water general	4%	3%	7%

Bolded numbers indicate a statistically significant difference among the comparison group indicated in the superscript. Super script "a" equals Asian languages; superscript "e" equals English; and the superscript "s" equals Spanish.

[6] Note the findings outlined in Table 6 cited average number of energy efficiency responses only, and do not count those who could recall energy conservation actions. Including energy conservation would produce a greater mean. Here, we were chiefly concerned with the FYPE program's ability to educate energy efficiency as it is their primary goal. We will investigate knowledge of actions overall in greater detail in the final report.

[7] Note we are investigating if this finding is part of a translation issue and may be "adjusting the thermostat" which was commonly cited in our English and Spanish survey efforts. Final results will be presented in the final report.

When we examine the differences across language groups, we see clear differences in awareness of actions, which is to be expected given differences in IOU program exposure. However, the most striking differences are among the target measures of the FYPE program, where the Asian-language respondents' have markedly higher recall of energy efficient appliance purchases (17%) and the installation of a CFL (45%) as compared to Spanish speaking respondents (7% and 36% respectively). [8]

Awareness of IOU Energy Efficiency Opportunities & Resources

With 86% of exposed respondents indicating that the FYPE program was providing them with new information, the Opinion Dynamics team sought to determine if the FYPE program was effectively raising awareness on specific IOU energy-saving opportunities and resources. Specifically, we looked for increases in awareness of FYPE promoted opportunities; this includes awareness of the following: IOU Rebates, IOU websites, FYP website, and home energy audits.

Differences by Exposure to FYPE Advertisements

Those exposed to the FYPE program are statistically more aware of all four energy saving opportunities than those who were not exposed to the program. While the program did not specifically target local utility websites and home energy audits, these findings may be indicative of a channeling effect. Note we indicate those that are promoted specifically by the FYPE program with the double-barred boxes. With high rates of recall for the FYP website overall, this difference in awareness may be due to the channeling effect of the FYP website, where browsers can click through to their local utility's website and educate themselves on a wide variety of program offerings. Additional research would need to be conducted to confirm this finding.

Table 8: Recall of Energy Saving Opportunities

	Asian Languages Total	Exposed	Not Exposed
Rebates and incentives from your utility	**42%**[n]	**48%**[n]	25%
IOU website for energy saving information	**25%**[n]	**28%**[n]	13%
Energy audits of your home	**21%**[n]	**24%**[n]	12%
Flex Your Power Website	**36%**[ne]	**23%**[n]	10%

[8] This finding may be indicative of one of two things: Asian-language respondents are exposed to fewer programs and are thus most likely to cite the measures promoted by FYPE due to limited exposure to other potential actions; or Asian-language respondents are more aware of these measures in general.

Bolded numbers indicate a statistically significant difference among the comparison group indicated in the superscript. Super script "n" equals not exposed; superscript "e" equals exposed

Differences by Language Group

Like other awareness metrics, we find that English respondents (87%) are more likely to cite at least one energy saving opportunity at statistically significantly higher numbers than Spanish (73%) and Asian language-speaking respondents (64%).

Interestingly, Spanish-speaking respondents have greater recall of at least one energy saving opportunity than Asian language-speaking respondents. In addition, they are more likely to recall rebates, IOU websites, and home energy audits than Asian language-speaking respondents.

Table 9. Recall of Energy Saving Opportunities by Language Group

	English	Spanish	Asian Languages
Rebates and incentives from your utility	**72%^{sa}**	**53%^{a}**	42%
IOU website for energy saving information	**59%^{sa}**	**37%^{a}**	25%
Energy audits of your home	**49%^{a}**	**50%^{a}**	21%
Flex Your Power Website	**42%^{s}**	18%	**36%^{s}**

Bolded numbers indicate a statistically significant difference among the comparison group indicated in the superscript. Super script "a" equals Asian languages; superscript "e" equals English; and the superscript "s" equals Spanish.

These findings indicate that of all three groups, Asian language-speaking respondents may be the least exposed to these specific energy saving opportunities, even when compared with other hard-to-reach populations (e.g. Spanish speakers). These differences may be due, in part, to greater energy efficiency program outreach to Spanish-speaking respondents across all Statewide IOUs when compared with Asian-language outreach programs.

However, the Asian language-speaking respondents are more likely to cite the Flex Your Power website as a resource than Spanish-speaking respondents and in comparable numbers to English-speaking respondents. This finding indicates that the FYP website may be a useful resource to this population in particular. More research will need to be conducted to determine if internet access and use is higher in this population compared to others. Opinion Dynamics did not examine percent of individuals who had internet access.

Impact of the FYPE Program on Energy Efficiency Purchases

To assess the purchase behaviors of FYPE's target audience, the Opinion Dynamics team asked if respondents had purchased an appliance and/or a CFL since January 2008.

Differences by Exposure to FYPE Advertisements

When we examine the relationship between exposure to FYPE messaging and the purchase of a CFL or energy efficient appliances, we find statistically significant difference among the exposed and unexposed in the purchase of an energy efficient appliance and the purchase of a CFL.

Table 10. Self-Reported Energy Efficiency Purchase Behavior by Exposure to FYPE

	Asian Languages Total	Exposed	Not Exposed
Percent Purchased an EE Appliance	16%	**19%^{na}**	8%
Percent Purchased A CFL	29%	**31%^{na}**	23%

Bolded numbers indicate a statistically significant difference among the comparison group indicated in the superscript. Super script "n" equals not exposed; superscript "e" equals exposed

These findings may indicate that the FYPE program is having an effect on energy efficient appliance purchases among its target audience.

Differences by Language Groups

To compare these findings to our Tracking study, we combined data from two tracking study surveys to ensure that our comparisons cover the same time period. Our findings follow. When we examine differences by language group, we find that Asian-language respondents purchased at the lowest rate among the three language groups. This finding may be indicative of an unknown barrier to CFL purchase among this specific group.

Table 11. Self-Reported Energy Efficiency Purchase Behavior by Language Group

	English (T1 &T2)	Spanish (T1 &T2)	Asian Languages
	802	804	604
Percent Purchased an EE Appliance	16%	**20%^{ea}**	16%
Percent Purchased A CFL	**57%^{a}**	**62%^{ae}**	29%

Bolded numbers indicate a statistically significant difference among the comparison group indicated in the superscript. Super script "a" equals Asian languages; superscript "e" equals English; and the superscript "s" equals Spanish.

FYPE Level of Influence

To assess the potential influence of the FYPE program on awareness of energy saving actions, opportunities, and resources as well as energy efficiency purchase behaviors, the Opinion Dynamics team developed a series of questions to comprise a "level of influence" index. The findings for this level of influence are preliminary, but seek to understand the potential for the FYPE program to influence behaviors as a marketing and outreach campaign. This level of influence does not seek to determine FYPE's level of influence relative to other drivers, such as price. However, we will address these other drivers and seek to add context to these findings in our final report. For now, we report only the level of influence scores for this specific effort.

The specific questions used to determine the level of influence of the FYPE program are consistent across all Statewide Marketing and Outreach. The questions included, however, varied slightly across survey efforts. For this effort, the following questions were included in the level of influence battery:

- Did the television, radio, and print advertisements provide you with new information?
- Did the information in the ads motivate you to save energy in ways you had already considered?
- How much did the advertisements cause you to want to make changes in how you behave regarding energy use in your home?
- How much did the advertisements increase your awareness of actions to save energy in your home?
- How much did the advertisements cause you think differently about how you can save energy in your home?
- Were the ads a good way to explain the importance of saving energy in your home?
- How much influence did the advertisements have on your decision to purchase a product that saves energy?

Index scores range from 0 to 1, with 0 indicating no influence and 1 indicating a very high influence[9]. Index scores were created for each survey respondent who indicated being exposed to the program based on their response to the aforementioned questions. The overall program Influence Index score is an average of each respondent's individual score. The level of influence for the FYPE neighborhood-based survey effort was .76, indicating that that the program is having a relatively high level of influence as an education and information campaign.

[9] Note that the Program Influence Index score is being calculated for many of the Campaigns' tactics and will be compared to one another in the final report. In addition, the detailed methodology to calculate the Program Influence Index score will be included in the final report.

APPENDIX A. INTERCEPT SITES BY ZIP CODE FOR FYPE ASIAN LANGUAGE INTERCEPT SURVEYS

Table 12. Regions for Intercept Research

Target Area	Language	City	Zip Code
Los Angeles	Chinese	San Gabriel	91745
		Hacienda Heights	91748
		Rowland Heights	91776
	Korean	Los Angeles	90004
			90005
			90006
			90010
			90020
	Vietnamese	Los Angeles	90044
		Westminster	92683
San Francisco	Chinese	Cupertino	95014
		San Jose	95129
		Saratoga	95130
	Korean	Cupertino	95014
		Saratoga	95070
			95130
		San Jose	95129
	Vietnamese	San Jose	95116
			95121
			95122

D.2 Data Collection Instrument

APPENDIX B. NEIGHBORHOOD-BASED QUESTIONNAIRE

1. If someone had high energy bills in their home, what are THREE energy efficiency improvements that they might make to lower their energy bill?

1. _____

2. _____

3. _____

2. Do you agree or disagree with the following statements? (Circle one)

	Strongly Disagree						Strongly Agree
I am not very concerned about the amount of energy used in my home	1	2	3	4	5	6	7
People like me are such a small part of the whole energy consumption picture that it really doesn't matter how I use energy	1	2	3	4	5	6	7
Every home should make a real effort to save energy	1	2	3	4	5	6	7
I would not pay more for a product that was energy efficient	1	2	3	4	5	6	7
Energy saving has become a widespread practice in California	1	2	3	4	5	6	7
Information and tips on how to save energy in my household are *easy* to find	1	2	3	4	5	6	7

When looking to buy a product that uses energy, my household seeks out the most energy efficient product available	1	2	3	4	5	6	7

3. Please indicate if your household Purchased any of the items since January. (Check box if Yes)		4. Did you purchase a model that was specifically promoted as using less energy than other similar products? (Check your response below)	
A refrigerator	□ Yes→	□ Yes	□ No
A clothes washer	□ Yes→	□ Yes	□ No
A dishwasher	□ Yes→	□ Yes	□ No
A central air conditioner	□ Yes→	□ Yes	□ No
A window air conditioner	□ Yes→	□ Yes	□ No
A light bulb	□ Yes		
A compact florescent light (CFL) bulb	□ Yes		

5. Have you heard of any of the following before today (Check all that apply)?

□ Change a Light, Change the World

□ Click it or Ticket

□ Energy Star

□ CLEO--Community Language Efficiency Outreach

□ Flex Alert

□ Flex Your Power

□ PACE--Pacific Asian Consortium in Employment

□ None (Don't read)

6. Are you aware of any of the following energy saving opportunities? (Check all that apply)

□ Rebates and incentives from your utility for energy efficient appliances or for making home improvements

□ Energy audits of your home to find ways to save energy

□ The Flex Your Power website: www.fypower.org

□ Your electric or gas utilities' website for energy saving information

□ None (Don't read)

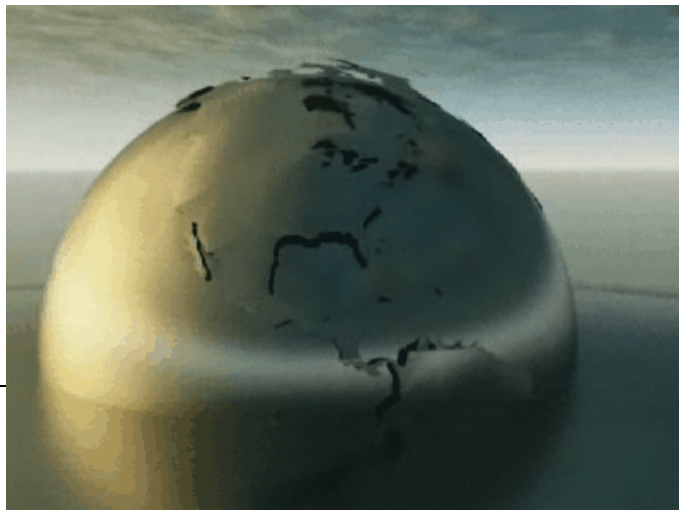
7. Have you seen any of these advertisements before?	
☐Yes	☐No

This print advertisement:

Thế giới của chúng cũng mỏng manh như bản thân chúng vậy. Hiện tượng hâm nóng toàn cầu đe dọa không những cho trái đất mà còn cho cả những cư dân quý báu trên đó: con cháu chúng ta. Nếu mọi người cùng tham gia, chúng ta có thể tạo ra những thay đổi lớn trong cuộc chiến chống lại các mối đe dọa này. Vào năm ngoái, cư dân California đã đổi trên sáu triệu bóng đèn thường bằng bóng huỳnh quang (CFLs). Hãy làm hơn thế nữa. Nếu tất cả mỗi người thay thế 5 bóng đèn thường bằng loại mới tiết kiệm điện, chúng ta có thể giảm thiểu lượng khí thải gây ra hiện tượng hâm nóng toàn cầu. Điều chủ yếu là chúng ta phải hành động NGAY BÂY GIỜ. Con cháu chúng ta không phải là tương lai của chúng ta — chính chúng ta là tương lai của chúng. Để biết thêm chi tiết về các loại tiền hỗi phí và các sản phẩm tiết kiệm năng lượng, xin vào trang **FlexYourPower.org/Vietnamese**. Cuộc chiến chống lại hiện tượng hâm nóng toàn cầu chỉ mới bắt đầu.

Flex your POWER℠.ORG

TV advertisements with the following images:



8. Have you heard any radio advertisements featuring a man or a woman acknowledging that everyone is concerned about the economy and the rising cost of products? However, they note that the biggest problem facing our future is actually global warming because it will affect the world we leave to future generations. **"It is essential for us to act right now. The fight against global warming has just begun." a**nd use examples like **"If everybody changes 5 regular light bulbs into CFL bulbs, not only would we reduce our energy costs but we would also reduce the rate of global warming."**

□Yes □No

9. Did the television, radio or newspaper ads provide you with <u>new</u> information? □Yes □No

10. Did the information in the ads motivate you to save energy in ways you had already considered? □Yes □No

11. Did the information *increase* your desire to save energy? □Yes □No

12. How much did the advertisements:

	Not at All						Very Much
Cause you to want to make changes in how you behave regarding energy use in your home?	1	2	3	4	5	6	7
Increase your awareness of actions to save energy in your home?	1	2	3	4	5	6	7
Cause you to think differently about how you can save energy in your home?	1	2	3	4	5	6	7

13. Were the ads a good way to explain the importance of saving energy in your home?

"not at all" 1 2 3 4 5 6 "very much" 7

Answer the question below IF you have recently purchased an energy efficient appliance.

14. How much influence did the advertisements have on your decision to purchase a product that saves energy?

"no influence" 1	2	3	4	5	6	"a lot of influence" 7

15. Since January 2008, have you attended a local community event such as a festival or parade?	16. Did you encounter any information on energy efficiency at this/these event/s?
□Yes→ □No	□ Yes □ No □ Don't know

17. Since January 2008, have you attended a seminar on energy efficiency sponsored by a community group or non-profit agency?		
□Yes	□No	□Not sure of sponsor

Go to Question 21 if you have not attended a local community event or seminar.

18. As you think about the information provided at the event or seminar, was any of this NEW information to you?

□Yes □No

19. How useful was the energy efficiency information you received at the event or seminar?

"not at all useful" 1	2	3	4	5	6	"very useful" 7

20. Since the event, did you take any actions as a result of the information you received?

□Yes □No

If YES, please describe the actions you have taken since this event:

_____

_____

_____

21. Since January 2008, how frequently have you heard or read things that you could do to reduce energy use in your home? This could include purchasing energy efficient appliances, light bulbs, or changing behaviors.

"not at all" 1	2	3	4	5	6	"very frequently" 7

22. Do you own or rent your home? (Check one)

□ Own □ Rent/Lease

23. Which of the following best describes your age? (Check one)

□ Less than 18 years old □ 25-34 years old □ 45-54 years old □ 65 or older

□ 18-24 years old □ 35-44 years old □ 55-64 years old

24. Do you own or operate one of the following types of businesses in the local area?

Restaurant or foodservice	□Yes	□No
Dry cleaner	□Yes	□No
Nail or beauty Salon	□Yes	□No
Hotel or motel	□Yes	□No
Financial services company	□Yes	□No
Multi-family housing or other property Management	□Yes	□No

Other Business. Specify: _____

25. What is the name of your electric utility? (Check one)

□ Pacific Gas and Electric

□ Southern California Edison

□ San Diego Gas and Electric

□ LADWP

□ Other, Please Specify: _____

26. What is your gender? (Check one)

□ Male □ female

27. Which of the following best represents your annual household income from all sources in 2007, before taxes? Was it . . . .? *(READ)*

□ Less than $25,000

□ $25,000-34,999

□ $35,000-49,999

□ $50,000-74,999

□ $75,000-99,999

□ $100,000-149,999

□ $150,000-199,999

□ $200,000 or more

28. What is your zip code? _____

Thank you for participating in this survey!

E. COMMUNITY-BASED ORGANIZATION (CBO) OBSERVATIONS AND INTERCEPT SURVEYS

E.1 Detailed Program Findings Memo

MEMO

To: CPUC (for utility and implementer comments)

From: Opinion Dynamics Evaluation Team

Re: Draft: CBO Events Indirect Impact Evaluation Interim Feedback Memo

Date: 04/14/09

Summary of Findings

Through our CBO event analysis, the Opinion Dynamics team analyzed the impact of the Flex Your Power-Rural (FYPR) program's Community Based Organization (CBO) Events in 2008. Many of the events include booths or tables dedicated to FYP marketing. The presentations are dedicated to energy efficiency and given to select audiences. We sought to determine four primary things: (1) Who the CBOs reach at events; (2) What education or information is provided at the CBO Events and how it is provided; (3) The likelihood that CBO events will induce behavior change; and (4) The indirect and direct energy saving behaviors participants intend to take as a result of the CBO efforts. While our process evaluation revealed that the CBOs are reaching most of the rural areas of California and disseminating a wide variety of marketing collateral, the purpose of this impact analysis is to assess how outreach events may be affecting energy efficiency behavior among rural Californians[1]. We found the following:

Who are the CBOs reaching at events?

- At the majority of booth events observed, attendees were Caucasian and Hispanic, mostly English-speaking but some attendees only spoke Spanish. Although the events are not targeted Spanish-speaking events, our observations revealed that many people living in these rural areas speak Spanish as their first language and are not fluent in English. Families with children of all ages are represented at multiple events, but a few events attracted more narrow constituencies such as middle age adults and senior citizens. The booth events reach a more diverse population in terms of age and homeownership, consistent with the CA general population census data.

[1] Note that we are currently drafting a data request to RS&E for their 2008 CBO event database. This data will be incorporated in the final indirect impact evaluation report to accurately document the reach of the CBO events in 2008.

- The presentation events were given to specific groups or clubs, such as a Senior Citizen home[2] or a collection of community leaders. Each CBO presentation targets a different and discrete audience. The presentations are given to more homogeneous groups that skew towards older audiences that own homes.

What education or information is provided at the CBO Events and how is it provided?

- The CBOs accurately implemented the instructions provided in the CBO training. The CBOs promoted the four energy saving recommendations[3] upon which they were instructed at all of the events. They also disseminated the FYP marketing collateral, displayed promotional signs and posters, incorporated interactive and educational games into the events, encouraged pledge card signings and recruited community leaders to help advocate for energy efficiency at the events. The presentations also included a general overview of the benefits of saving energy (cost and environmental) as well as resources to find further information such as the FYP website and toll-free number.

What is the likelihood that CBO events will induce behavior change?

- Once the CBOs receive the opportunity to educate event attendees on energy efficiency, via conversation, FYP marketing collateral or formal presentations, our respondent survey data indicate that the events are likely to induce behavior change as it has a positive impact on the majority of respondents' knowledge, awareness and intent to take action. Event participants that reported "little" or "some" energy knowledge prior to the event, stated a large increase in energy efficiency knowledge due to the event. In addition, the Program Influence Index scores calculated for booth events (.79) and presentation events (.76) are very high, indicating that the CBO events have a very high likelihood of inducing behavior change.
- Our observations of the booth events revealed that while the CBOs accurately implemented the training instructions, the delivery method of games and prizes tended to attract some event attendees but not all. The more people that the CBO booth attracts at a given event, the more likely that event will influence the behavior of all event attendees. Therefore, the CBO events' potential to influence behavior change might increase if the CBO events incorporate more diverse tactics to drive booth interest such as product demonstrations.

[2] Notably, the individuals living in the Senior Citizen home would likely only be able to take low-cost or no cost measures such as using CFL bulbs in their dwelling or turning off lights/electronics when not in use.

[3] (1) Use CFL bulbs or other energy efficiency lighting products; (2) Buy/Install ENERGY STAR-qualified appliances; (3) Unplug electronic devices/turn off lights when not in use; and (4) Use a ceiling fan to cool your home in the summer instead of air conditioning.

What indirect behaviors and direct energy saving behaviors do participants intent to take as a result of the CBO efforts?

- The FYPR program is effectively impacting event participants' intent to take indirect[4] behaviors and direct energy saving behaviors. Per indirect behaviors, 70% of presentation respondents and 60% of booth respondents plan to extend the reach of the FYP message by sharing the information they learned with others. Approximately half of the respondents are likely to search for additional information on ways to save energy.
- In addition, a great majority of respondents plan to take direct energy saving behaviors. Respondents that attended presentations plan to install energy efficient lights (82%), change their energy usage behavior (76%) and install energy saving appliances (74%). Respondents that attended booth events also plan to install energy efficient lights (73%), change their energy usage behavior (69%) and install energy saving appliances (61%).

Methodology

The Opinion Dynamics evaluation team utilized several primary data collection techniques to support the findings in this memo. Primary data collection encompassed observational research[5] at a sample of 19 events from June – October 2008. The events included both booth type events, where CBOs set up a Flex Your Power booth to disseminate information, and presentation type events, where CBOs gave presentations to communicate the Flex Your Power message to discrete audiences. The evaluation team worked closely with RS&E to coordinate the logistics for attending events. We attempted to attend at least one event per CBO, however this attempt was subject to unforeseen complications such as last-minute cancellations, lack of sufficient lead time between receipt of event information and the event date, several CBO's lack of proactive communication of event schedules, and resource availability. In light of these complications, we were able to observe at least one event per CBO with the exception of three; the Children's Museum, The Santa Maria Valley YMCA and the Volunteer Center of the Redwoods. The table below shows the breakdown of the 19 completed event observations by CBO and event type.

[4] An indirect behavior is an action one might take before adopting a measure or behavior from which energy savings can be calculated. An example of an indirect behavior might be if a person seeks additional information about energy efficiency, such as on a website or by contacting their local utility.

[5] Opinion Dynamics prepared a ten-page guide for observers to document and describe the event, booth, staff, information provided, attendee-types, and the attendees' level of interest in the program information. This involved taking detailed notes, careful listening and watching human behavior – such as actions, reactions, facial expressions and body movements – to answer the questions included in the guide. Each event observation lasted two hours.

Table 1. CBO Event Observations Completed

CBO	Presentation	Booth	Other*	Total
Amador-Tuolumne Community Action Agency		2		2
Children's Museum				
Climate Protection Campaign		1		1
KernCorps Americorps Program	1			1
Kings Community Action Organization		2		2
Mission Resource Conservation District	1	2		3
Plumas Community Devel. Commission	1			1
Power Up NC		1		1
Santa Maria Valley YMCA				
United Way of Merced		1		1
Volunteer Center of Mendocino		1		1
Volunteer Center of Riverside County		1	1	2
Volunteer Center of the Redwoods				
Warner Community Resource Center	1	1		2
Watsonville YMCA, Central Coast		1		1
Western Shasta Resource Conservation District		1		1
Total	**4**	**14**	**1**	**19**

*One event did not fit in the traditional booth or presentation category. This was an energy efficiency-themed children's art contest.

After observing several events, Opinion Dynamics chose to complement the observation approach with brief, in-person intercept surveys capturing participants' reactions to the booth-disseminated information immediately following their encounters at the booths.[6] Note that the booth survey data only reflects the opinions of event attendees that engaged in conversation with the CBO representative at the booths. Excluded are people that attended the events but did not interact with the CBO booth. The booth intercept surveys allow us to assess the potential impact of the CBO efforts on participants' energy usage behavior. For the presentation events, Opinion Dynamics administered surveys to all of the participants immediately following the presentation. The table below shows the number of participant surveys completed at the nine events we observed. Note, that the sample sizes for the presentation and intercept survey data may vary by question from the total completes below, as we often use valid percents, i.e. omit missing data from the base total.

[6] The intercepts were 25 questions long and took approximately 10 minutes to complete. They were self administered and they covered participants' reasons for visiting the booth, their knowledge of energy efficiency, the usefulness of the information provided, the likelihood that they will take specific actions as a result of visiting the booth, their awareness of specific information campaigns, and included psychographic and demographic questions. In return for completing an intercept survey, each participant was offered $5.

Table 2. Participant Surveys Completed at CBO Events

CBO	Event Name	Presentation Completed Interviews	Booth Intercept Completed Interviews
Plumas County Community Development Commission	Presentation to Greenville Senior Nutrition Site	16	
Mission Resource Conservation District	Presentation to Save Our Forest Group	11	
Warner Community Resource Center	Presentation to the Stoneridge 55+ Community	23	
KernCorps Americorps Program	Presentation to the Lamont Community Collaborative	31	
Kings Community Action Organization	Corcoran Cotton Festival		22
Mission Resource Conservation District	Stage Coach Sunday		21
Western Shasta Resource Conservation District	Return of the Salmon Festival		20
Amador-Tuolumne Community Action Agency	Tuolumne County Health Faire		18
Volunteer Center of Mendocino	Ukiah Pumpkin Festival		19
	Total	**81**	**100**

Note that due to limits on participant contact information, it was not possible to obtain a representative sample of attendees at each event or a representative sample of the total events in 2008. Instead, our findings are drawn from a convenient sample of events and participants. The observational and intercept survey findings presented in this report are not meant to be representative of the CA rural population. These findings are qualitative and, as such, provide a window into the CBO efforts and the participants in those efforts.

Detailed Findings

Who are the CBOs reaching at Events?

In this section we provide a qualitative overview of the type of people in attendance at CBO events[7]. While each CBO event attracts a different type of audience, some commonalities exist in the audience that is attracted to booth events and presentation events. The booth events were general events open to the community but each had a theme such as a Pumpkin festival or a Health Fair. Many booths are set-up at large community events such as festivals or fairs where CBOs can reach a wide variety of individuals in rural areas. At the majority of events observed, attendees were Caucasian and Hispanic, mostly English-speaking but many attendees only spoke Spanish. Although the events are not targeted Spanish speaking events, our observations revealed that many people living in these rural areas speak Spanish as their first language and are not fluent in English. Families with

[7]Please note that the final report will include quantitative reach data for the 2008 CBO events. [4] Please note that the final report will include quantitative reach data for the 2008 CBO events.

children of all ages are represented at multiple events, but a few events attracted more narrow constituencies such as middle age adults and senior citizens.

The presentation events were given to specific groups or clubs, such as a Senior Citizen home or a collection of community leaders. Each CBO presentation targets a different and discrete audience. Two events that we observed specifically targeted senior citizens based on the location selected for the presentation (i.e. a senior nutrition center and senior citizen's club). Another CBO presentation entitled "Save Our Forest" attracted a range of adults, and at the final presentation observed, the attendees were Hispanic professionals from other local community organizations.

Although the survey data was gathered from a convenient sample and is not representative of the events, it supports the difference in populations that attend the different types of events. The booth events reach a more diverse population in terms of age and homeownership, consistent with the CA general population census data. Conversely, the presentations are given to more homogeneous groups that skew towards more mature audiences that own homes. However, two of the presentations that we were able to observe were given to Senior Citizen communities. Therefore, it can be surmised that if we were able to observe more presentations we may have found a more even age distribution.

Table 3. Survey Demographic Data

	Presentation Survey Respondents	Booth Intercept Survey Respondents	2006 CA General Census Data
Homeownership	n=76	n=96	
Own	84%	52%	58%
Rent	16%	48%	42%
Age	n=76	n=96	
18-34	25%	28%	34%
35-44	8%	14%	21%
45-54	3%	24%	19%
55-64	22%	18%	13%
65 or older	42%	16%	15%

The survey data indicate that many event participants hold favorable attitudes toward energy efficiency, consistent with our findings from the General Population Tracking Survey. For descriptive purposes, we compared the event participants' agreement with the statement, "I am not very concerned about the amount of energy used in my home", to the respondents in the second track of our General Population Tracking Survey, fielded in October, 2008 immediately following the FYP Summer '08 Campaign. This analysis indicates that the CBO events reached people who are less concerned with the amount of energy used in their homes than the general population.

Table 4. Post-Event Energy Efficiency Perceptions

Do you agree or disagree with the following statements? (7-point scale, 1=Strong Disagree, 7=Strongly Agree)	Presentations % Agree (6-7 rating) n=62	Booth Events % Agree (6-7 rating) n=100	General Population Survey – Track 2
I am not very concerned about the amount of energy used in my home	21%	24%	14%

What education or information was provided at the CBO Events and how was it provided?

Our survey and observation data help to understand the information provided at the events. The CBO training that we observed in the Spring of 2008 revealed the information that RS&E intended to disseminate through CBO events. Each CBO was trained by RS&E to promote four energy saving recommendations: (1) Use CFL bulbs or other energy efficiency lighting products; (2) Buy/Install ENERGY STAR-qualified appliances; (3) Unplug electronic devices/turn off lights when not in use; and (4) Use a ceiling fan to cool your home in the summer instead of air conditioning. During our observations, we found that the CBOs were promoting these four behaviors in some capacity at all of the events.

Booth Events

The CBOs deliver the FYP message by disseminating information in booths at local community events. While the CBOs are trained in the basics of what to do for events, they are given creative license to develop ways to drive interest in the booths. Many of the CBOs incorporated energy efficiency themed games and prizes to lure people towards the booths. Once at the booths, CBOs tried to engage the attendees in conversation about energy efficiency and provide them with literature to take home. Our observations found that, among all of the people that passed by the booth at the rural events, there was a high level of interest in the games (trivia games, prize spinning wheel, Bingo) and prizes (RS&E provided CFLs, FYP Frisbees, FYP pens, etc.), showing that the games/prizes were an effective tactic in attracting this population. Notably, the games lured many children who were often accompanied by adults. Although, children are not the main target of the campaign, it seemed to be an effective tactic in getting adults to approach the booth by way of their children's interest.

Although the games/prizes were an effective method to attract people, people did not often stay to engage in a conversation with the staff about energy efficiency or take literature. Observers documented the following behavior indicators:

- Several attendees looked around, avoided eye contact with the booth attendants, and tried to get away from the booth once they discovered that the booth was offering information on energy efficiency.
- As is typical with giveaways at booths, several attendees quickly grabbed prizes and ran away before they could engage in conversation with the booth attendants.

After games, information was disseminated through one-on-one conversations with participants. Over half of the booths also utilized visual displays (oversized pledge cards, list of energy saving behaviors), as well as provided literature and other giveaways. Pledge cards

were one of the most common methods used to spark conversation about energy efficiency and encourage people to take action at home. One booth featured a demonstration of CFLs, which sparked great curiosity. People were amazed by the demonstration and were excited to use them at home. Virtually all participants showed curious interest towards the sample display of the newer style CFL bulbs.

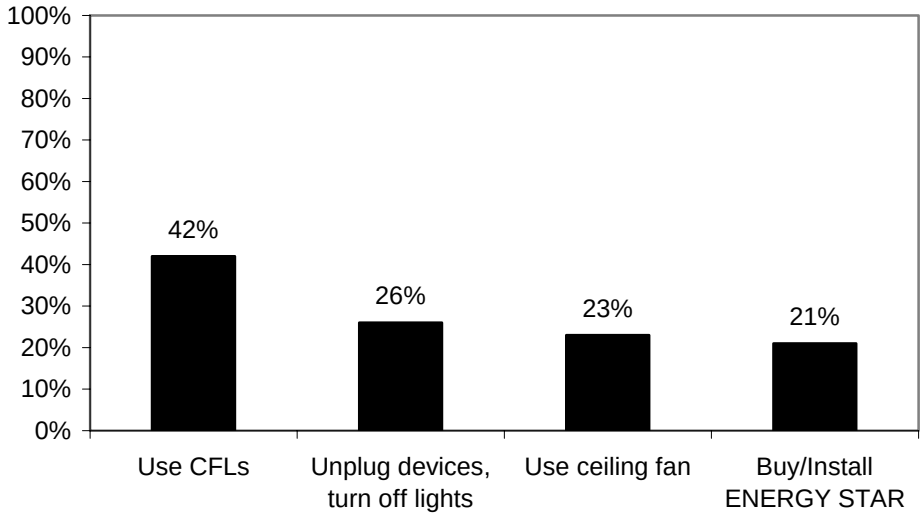
While most CBO representatives waited in the booths for attendees to walk by, some CBO representatives took a more proactive role in the events. One CBO representative walked around the larger event handing out Frisbees and other items and talked to people about saving energy and cutting energy costs. Another CBO representative spoke on stage at one event about energy efficiency and FYP to all attendees. At this event, public officials also spoke and signed an oversized pledge card. These proactive tactics were encouraged by RS&E at the training and seemed to drive greater interest in the booths.

Although not a traditional booth event, another unique CBO strategy involved targeting children through an art contest at the end of a three week educational campaign. The CBO teamed with another community based organization, an after-school center that runs educational programs for children. During this event, school children ages 6 and up decorated incandescent light bulbs and participated in a verbal quiz testing their knowledge of energy conservation measures such as shutting off lights after leaving a room and taking shorter showers to help conserve water.[8] Interest among the children was extremely high and all wanted to participate in answering questions.

During our observation of 14 booth events throughout 2008, we documented the total number of people that engaged in conversation with the CBOs about energy efficiency over a two-hour time period. We observed a total of 2,161 people at CBO events during our data collection process. Based on our observations, 77 people visit the booths on average each hour. Note that this is a sample of the people that engaged with the CBOs during events as the events often lasted longer than our observation period. During the two-hour observation, we documented the number of people that heard each of the four main energy saving recommendations that CBOs were trained to promote at events. As shown in the Exhibit below, the CBOs promoted CFL use at booth events the most while the installation of ENERGY STAR appliances was promoted the least. Many CBOs also promoted energy saving recommendations above and beyond these four. Additional recommendations included insulation, water conservation tips, low flow shower heads, caulking windows and doors, solar technologies, thermostat and water heater setting reductions, the use of drapes to aid in heating and cooling, and double-paned windows.

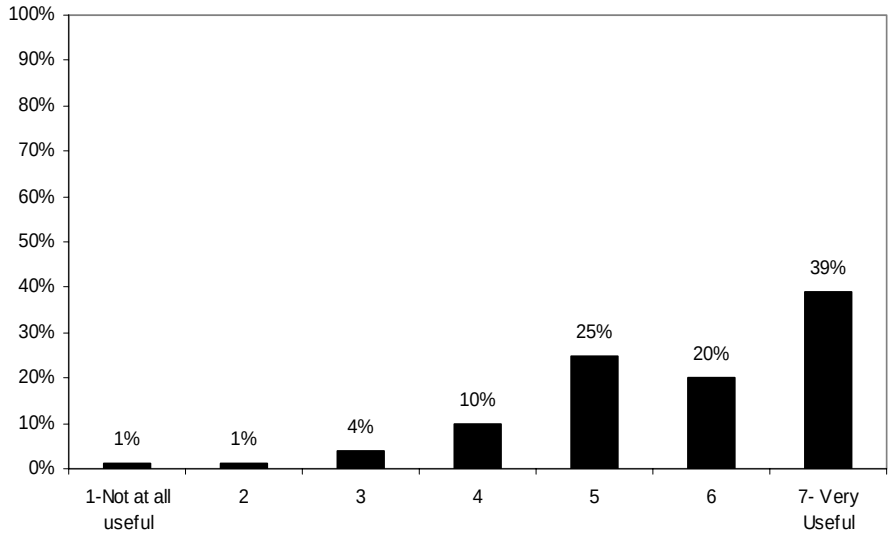
[8] These topics had been covered during the multi-week education effort.

Figure 1. Energy Efficiency Behaviors Promoted at Booth Events
(% of Participants that Heard the Main Energy Saving Behaviors
Multiple Response, n=2161)



We asked respondents to our booth intercept surveys to rate the usefulness of the information they received from the booth on a scale from 1 to 7, where 1 was not useful at all and 7 was very useful. Roughly six in ten respondents (59%) claimed that the information was quite useful (rating it a 6 or 7), while most of the remaining respondents gave it a somewhat useful rating (35% rated it a 4 or 5).

Figure 2. Usefulness of CBO Booth Event Information
(n=98)



Presentation Events

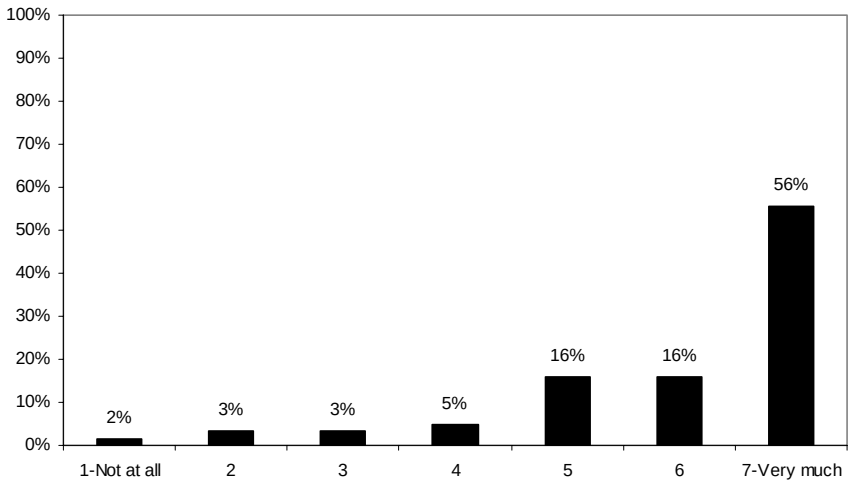
The CBOs also deliver the FYP message by giving presentations to discrete populations, such as specialty clubs or groups. Our observations at 4 presentations revealed the type of information disseminated at these events. The presentations varied in terms of FYP being the only presentation topic or FYP being part of several topics, i.e. environment conservation or other social marketing initiatives. Many of the presentations are supported by PowerPoint slides and incorporate other tactics such as bulb exchanges and energy efficiency-themed games.

The reaction to the presentations was often determined by the nature of the audience itself and/or the CBOs excitement in the material. Audiences that held a predisposition to environmental conservation showed great interest and enthusiasm in the information. While other audiences, such as those at a Senior Center, appeared bored and pre-occupied. In this specific case, the CBO did not engage the participants much during the presentation, rushed through the material and seemed to gloss over questions. In most cases, however, the CBO presenter answered questions accurately and actively engaged the audience.

At presentation events, the CBOs had more of an opportunity to cover all four energy saving recommendations with the given audience. The CBOs did in fact cover all four energy saving recommendations they were trained to promote in every presentation we observed. The presentations also included a general overview of the benefits of saving energy (cost and environmental) as well as resources to find further information such as the FYP website and toll-free number.

We asked presentation participants to rate the usefulness of the information they received from the presentation on a scale from 1 to 7, where 1 was not useful at all and 7 was very useful. Roughly seven in ten respondents (72%) claimed that the information was quite useful (rating it a 6 or 7), while most of the remaining respondents gave it a somewhat useful rating (21% rated it a 4 or 5).

Figure 3. Usefulness of CBO Presentation Event Information (n=63)



What is the likelihood that CBO events will induce behavior change?

To determine the likelihood that CBO events will induce behavior change, we examined a multitude of potential indicators including exposure, awareness and knowledge. Finally, we developed a program influence index score to provide a quantitative assessment of the likelihood that CBO events will induce behavior change[9].

Exposure

Only one-quarter of survey respondents said they received "a lot" of information on how to save energy before the event. This findings supports that the CBO events have the potential to significantly increase awareness and knowledge of energy saving opportunities in rural communities given that many event participants are not highly exposed to other sources of energy saving information.

Table 5. Previous Exposure to Energy Saving Opportunities

How much information on how to save energy had you received BEFORE TODAY? (7-poing scale)	Presentation Survey (n=64)	Booth Intercept Survey (n=99)
A lot (6-7 rating)	22%	27%
Neutral (3-5 rating)	75%	65%
Not Much (1-2 rating)	3%	8%

Awareness/Knowledge

Although the majority of respondents claimed that they were not highly exposed to energy saving information prior to events, prior event brand awareness for "Flex Your Power" was fairly high with approximately 3 out of 4 respondents reporting that they had heard the Flex Your Power name before the event. Respondents may have recalled the name itself but not necessarily the energy saving opportunities intended to be communicated via FYP. This further supports the need and potential for the CBO events to induce behavior change as they provide the depth of information required for people to understand how they can save energy. As shown by the table below, awareness of the Flex Your Power brand name is consistent between the population that attends booth events in rural areas and the General Population in CA. Those that attended presentations seem to be more aware of the Flex Your Power brand, which could have motivated them to attend the presentation for more information.

[9] Note that throughout this task we were only able to assess the likelihood of behavior change and the intent to take action. We determined that contacting event participants after the fact to assess actual behavior change was not possible due to the CBOs guarantee that participants would not be contacted for surveying or soliciting purposes.

Table 6. Pre-Event FYP Brand Name Awareness

Had you heard of Flex Your Power before today?	Presentations % Aware (n=62)	Booth Events % Aware (n=98)	General Population Survey – Track 2
Flex Your Power	81%	70%	72%

We also asked respondents whether they were aware of energy saving opportunities after they participated in a CBO event. Awareness of utility rebates and incentives for energy efficient appliances and home improvements is high. Approximately, four out of five respondents were aware of the utility rebates and incentives. From our observations, presentations provide much more information than the booths. All of the presentations mentioned the FYP website as a resource, while the booth representatives had a limited amount of time with each participant and focused their conversations more on suggestions for how to save energy and why people should save energy. Given this, it is not surprising that more presentation participants were aware of the FYP website (70%) than the booth participants (45%). In addition, in comparison to the General Population Survey data, more presentation participants seem to be aware of energy information resources than the general population, which is expected since they were surveyed immediately after seeing a presentation that covered these resources.

Table 7. Post-Event Energy Saving Opportunity Awareness

Are you aware of any of the following energy saving opportunities?	Presentations % Aware (n=54)	Booth Events % Aware (n=92)	General Population Survey – Track 2
Utility rebates and incentives	85%	82%	72%
Flex Your Power website	70%	45%	59%
Energy audits	67%	42%	49%
Utility website for energy saving information	57%	51%	59%

Our surveys also explored the respondents' change in knowledge of energy efficiency due to the events. Most of the respondents reported having at least some knowledge of energy efficiency before participating in the events. While only a few survey respondents (6% of presentation and 5% of booth participants) reported having "very little" knowledge of energy efficiency prior to the event, these respondents reported the highest increase in knowledge after the event. Participants reporting "some" knowledge before the event (71% of presentation and 65% of booth participants) also reported a large increase in their knowledge. Respondents that claimed "a lot" of knowledge prior to the event did not feel that events increased their knowledge much. This is expected as the events offered information that was best suited for people with little knowledge of how to save energy. The figures below show the knowledge level that respondents had going into the events and their knowledge increase after the events. These data show that the events have the ability

to significantly increase knowledge of energy efficiency, especially among participants that do not have a lot of energy efficiency knowledge.

Figure 4. Impact of CBO Presentation Events on Energy Efficiency Knowledge

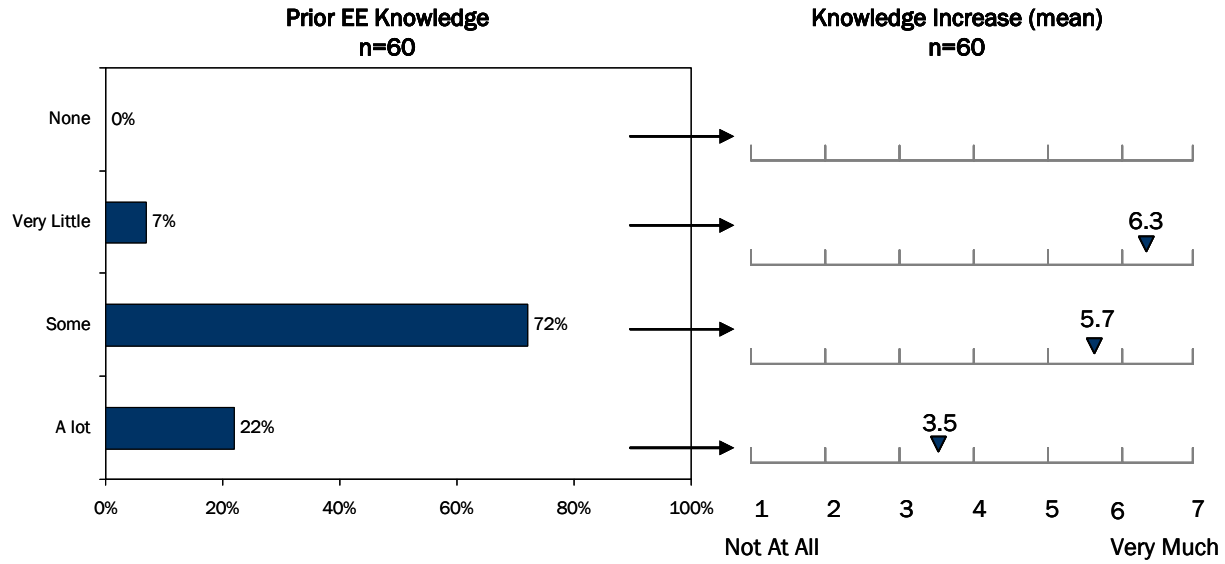
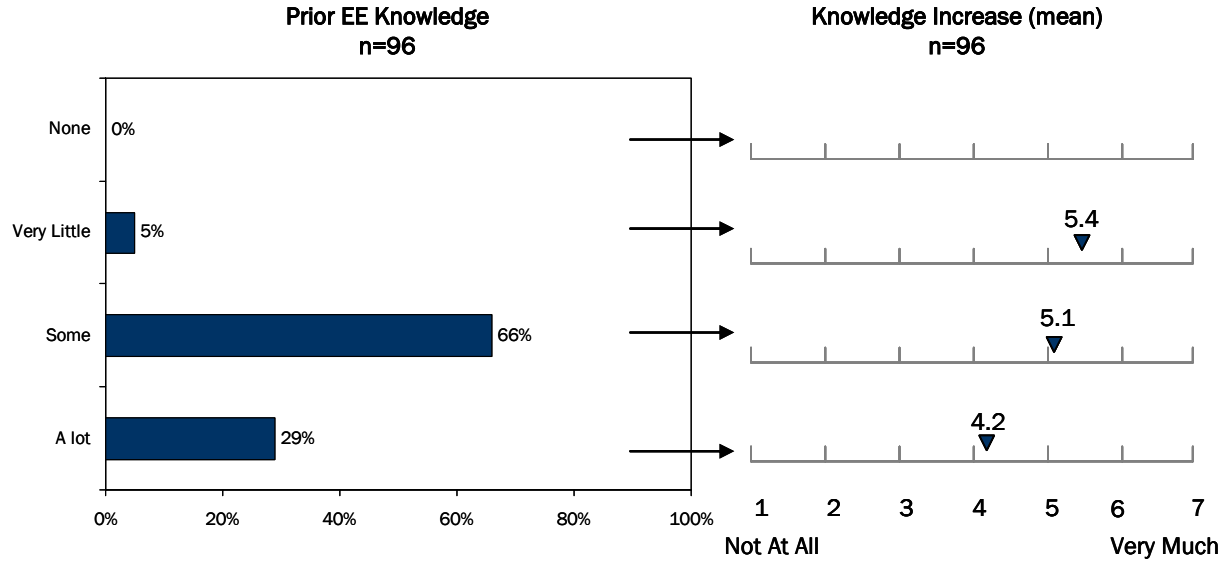


Figure 5. Impact of CBO Booth Events on Energy Efficiency Knowledge



To further explore the depth of energy efficiency knowledge that participations took away from the events, we asked respondents to list three ways by which a person with high energy bills could lower them[10]. Almost all of the respondents (90% of booth respondents and 74% of presentation respondents) were able to give three ways to save energy after the events. Note that the discrepancy between the number of presentation and booth respondents' who

[10] "If someone had high energy bills in their home, what are THREE energy efficiency improvements that they might make to lower their energy bill?"

gave exactly three ways to save energy is likely due to the way in which each survey was administered and not likely due to the type of event[11]. The top three energy efficiency improvements that respondents suggested were installing efficient lighting/replacing incandescent bulbs with CFLs, turning off lights when leaving a room and water conservation tips. The data, shown in the table below, indicate that the CBO events effectively communicated ways to save energy as most respondents were able to reiterate the knowledge gained through the event. The table below shows the top direct energy saving behaviors that respondents took away from the events.

Table 7. Post Event Knowledge of Energy Saving Behaviors (Multiple Response)

If someone had high energy bills in their home, what are three energy efficiency improvements that they might make to lower their energy bill (% that mentioned each action)	Presentations (n=56)	Booth Events (n=100)
Install energy efficient lighting, use CFLs	55%	59%
Turn off lights when leaving a room	38%	45%
Unplug/turn off power adapters and appliances with standby mode when not in use	30%	5%
Use less hot water/water general	27%	26%
Turn off/unplug TV/Electronics/computer	25%	23%
Use appliances in the morning/night /weekends	16%	10%
Purchase energy efficient appliances	14%	8%
Turn down water temperature	7%	15%
Turn thermostat to recommended set points	5%	21%

Influence Index

To assess the CBO events' overall potential influence on energy behavior, we calculated a Program Influence Index score for both the presentation and booth events. The index score can be anywhere from 0 to 1, with 0 indicating no influence and 1 indicating a very high influence[12]. We created an index score for each survey respondent based on their response to the following questions:

[11] The booth surveys were intercept surveys where the administrator was able to ensure that all of the survey was completed before accepting the survey. The presentation surveys were distributed to everyone at the end of each presentation and collected in aggregate; the administrator was unable to ensure that every person completed all of the questions in the survey.

[12] Note that the Program Influence Index score is being calculated for many of the Campaigns' tactics and will be compared to one another in the final report. In addition, the detailed methodology to calculate the Program Influence Index score will be included in the final report.

- As you think about the information provided, was any of this NEW information to you?
- Did you receive information about actions that you were already considering?
- How much did the information cause you to think differently about how you save energy in your home?
- How much did the information cause you to want to make changes in the way that you currently save energy at home?
- How much did the information increase your awareness of ways you can save energy in your home?
- Was this a good way to inform you of the ways you can save energy?

The overall Program Influence Index score is an average of each respondent's individual score. As shown in the table below, the index scores were very high for both the presentation (.76) and booth events (.79). This data indicates that the CBO events have a very high likelihood of inducing behavior change.

Table 8. Program Influence Index

Presentations	Booth Events
.76	.79

What percentage of CBO Event participants intend to take indirect and direct energy saving behaviors?

The intercept surveys help to determine the indirect and direct energy saving behaviors participants intend to take as a result of the CBO efforts. Per indirect behaviors, 70% of presentation respondents and 60% of booth respondents plan to extend the reach of the FYP message by sharing the information they learned with others. Approximately half of the respondents are likely to search for additional information on ways to save energy.

Table 9. Intent to Take Indirect Behaviors

Based on the information that you received, what is your likelihood to take the following actions at your home? (7-point scale, 1=not at all, 7=Very Likely)	Presentations % Likely (6-7 rating) (n=60)	Booths % Likely (6-7 rating) (n=99)
Share the information I have learned with others	70%	60%
Search for additional information on ways to save energy	55%	56%

We asked respondents to pick where they would look for more information as a follow-up the event. The Flex Your Power website is the most popular information resource that respondents would use. The data show that 56% of presentation respondents and 59% of booth respondents would look for more information on the Flex Your Power website.

Following up with the utility website and calling the FYP toll free number are also popular resources.

Table 10. Resources Respondents Would Use (Multiple Response)

As a follow up to what you learned today, where would you look for more information?	Presentations % Yes (n=81)	Booth Events % Yes (n=100)
Flex Your Power website	56%	59%
Utility website	27%	42%
Call FYP toll free number	27%	24%
Call a utility	22%	22%

Respondents stated their likelihood to take direct energy saving behaviors as a result of participating in the events. The CBO efforts seem to be effective in getting most participants to intend to take direct energy saving behaviors as the majority of respondents plan to install energy efficient lights, change their behavior with regard to how they use energy and install energy saving appliances. The data indicate that the presentations might be more effective in influencing behavior change, however it is uncertain if the discrepancy is due to the type event or the differences in the populations that attend these different events.

Table 11. Intent to Take Direct Behaviors

Based on the information that you received, what is your likelihood to take the following actions at your home? (7-point scale, 1=not at all, 7=Very Likely)	Presentations % Likely (6-7 rating) (n=	Booths % Likely (6-7 rating) (n=)
Install energy efficient lights	82% (n=62)	73% (n=97
Change my behavior with regard to how I use energy	76% (n=78)	69% (n=100)
Install energy saving appliances	74% (n=62)	61% (n=97

E.2 Data Collection Instruments

Exhibit Intercept Questionnaire

1. What did you learn today from the booth representatives? Please be specific.

	Not At All						Very Much
2. In general, how useful did you find the information provided by the booth representative?	1	2	3	4	5	6	7

3. As you think about the information provided, was any of this NEW information to you?

□Yes □No

4. Did you receive information about actions that you were already considering?

□Yes □No

Based on your experience at the booth, how much did the information….

	Not At All						Very Much
5. Cause you to think DIFFERENTLY about how you save energy in your home?	1	2	3	4	5	6	7
6. Cause you to want to make changes in the way that you currently save energy at home?	1	2	3	4	5	6	7
7. Increase your awareness of ways you can save energy in your home?	1	2	3	4	5	6	7

8. Were the booth representatives a good way to inform you of the ways you can save?	1	2	3	4	5	6	7

9. If someone had high energy bills in their home, what are THREE energy efficiency improvements that they might make to lower their energy bill?

1. _____
2. _____
3. _____

10. Had you heard of any of the following before today (Check all that apply)?

□Change a Light, Change the World □Flex Alert

□Click it or Ticket □Flex Your Power

□Energy Star

11. What best describes your knowledge of energy efficiency BEFORE TODAY? (Check one)

□ I had no knowledge □ I had very little knowledge □ I had some knowledge □ I had a lot of knowledge

	Not At All						Very Much
12. How much information on how to save energy had you received BEFORE TODAY?	1	2	3	4	5	6	7
13. How much did your knowledge of energy efficiency increase based on the information provided to you today?	1	2	3	4	5	6	7

14. Based on the information that you received from the booth representatives, what is your likelihood to take the following actions at your home?

	Not At All Likely						Very Likely
Search for additional information on ways to save energy	1	2	3	4	5	6	7
Share the information I have learned with others	1	2	3	4	5	6	7
Install energy efficient lights	1	2	3	4	5	6	7
Install energy saving appliances, such as energy efficient refrigerators, air conditioners, furnaces, water heaters, or others	1	2	3	4	5	6	7
Change my behavior with regard to how I use energy, such as turning off lights more frequently, lowering thermostat settings, pulling window shades during the daytime or others	1	2	3	4	5	6	7

15. Do you agree or disagree with the following statements (Circle one)?

	Strongly Disagree						Strongly Agree
I am not very concerned about the amount of energy used in my home	1	2	3	4	5	6	7
People like me are such a small part of the whole energy consumption picture that it really doesn't matter how I use energy	1	2	3	4	5	6	7
Every home should make a real effort to save energy	1	2	3	4	5	6	7
I would not pay more for a product that was energy efficient.	1	2	3	4	5	6	7
Energy saving has become a widespread practice in California	1	2	3	4	5	6	7
Information and tips on how to save energy in my household are *easy* to find	1	2	3	4	5	6	7
When looking to buy a product that uses energy, my household seeks out the most energy efficient product available	1	2	3	4	5	6	7
Reducing my home energy will help reduce climate change	1	2	3	4	5	6	7

16. Are you aware of any of the following energy saving opportunities? (Check all that apply)

□Rebates and incentives from your utility for energy efficient appliances or for making home improvements
□Energy Audits of your home to find ways to save energy
□The Flex Your Power website: www.fypower.org
□Your electric or gas utilities' website for energy saving information

17. As a follow up to what you learned today, where would you look for more information? (Check all that apply)

□ I will not likely follow-up for more information
□ Visit the Flex Your Power website
□ Call a utility (gas or electric company)
□ Visit a utility website
□ Call the Flex Your Power toll-free number
□ Don't know
□ Other: _____

18. Do you own or rent your home? (Check one)

□ Own □ Rent

19. Which of the following best describes your age? (Check one)

□ Less than 18 years old □ 25-34 years old □ 45-54 years old □ 65 or older
□ 18-24 years old □ 35-44 years old □ 55-64 years old

20. What is the name of your electric utility? (Check one)

□ Pacific Gas and Electric
□ Southern California Edison
□ San Diego Gas and Electric
□ Los Angeles Department of Water and Power
□ Other, Please Specify: _____

21. What is your zip code? _____

Thank you for participating in this survey!

Presentation Questionnaire

1. What did you learn today from the presentation? Please be specific.

	Not At All						Very Much
2. In general, how useful did you find the information provided in the presentation?	1	2	3	4	5	6	7

3. As you think about the information provided, was any of this NEW information to you?

□Yes □No

4. Did you receive information about actions that you were already considering?

□Yes □No

Based on your experience at the presentation, how much did the information….

	Not At All						Very Much
5. Cause you to think DIFFERENTLY about how you save energy in your home?	1	2	3	4	5	6	7
6. Cause you to want to make changes in the way that you currently save energy at home?	1	2	3	4	5	6	7
7. Increase your awareness of ways you can save energy in your home?	1	2	3	4	5	6	7

8. Were the booth representatives a good way to inform you of the ways you can save?	1	2	3	4	5	6	7

9. If someone had high energy bills in their home, what are THREE energy efficiency improvements that they might make to lower their energy bill?

1. _____
2. _____
3. _____

10. Had you heard of any of the following before today (Check all that apply)?

□Change a Light, Change the World □Flex Alert

□Click it or Ticket □Flex Your Power

□Energy Star

11. What best describes your knowledge of energy efficiency BEFORE TODAY? (Check one)

□ I had no knowledge □ I had very little knowledge □ I had some knowledge □ I had a lot of knowledge

	Not At All						Very Much
12. How much information on how to save energy had you received BEFORE TODAY?	1	2	3	4	5	6	7
13. How much did your knowledge of energy efficiency increase based on the information provided to you today?	1	2	3	4	5	6	7

14. Based on the information that you received from the presentation, what is your likelihood to take the following actions at your home?

	Not At All Likely						Very Likely
Search for additional information on ways to save energy	1	2	3	4	5	6	7
Share the information I have learned with others	1	2	3	4	5	6	7
Install energy efficient lights	1	2	3	4	5	6	7
Install energy saving appliances, such as energy efficient refrigerators, air conditioners, furnaces, water heaters, or others	1	2	3	4	5	6	7
Change my behavior with regard to how I use energy, such as turning off lights more frequently, lowering thermostat settings, pulling window shades during the daytime or others	1	2	3	4	5	6	7

15. Do you agree or disagree with the following statements (Circle one)?

	Strongly Disagree						Strongly Agree
I am not very concerned about the amount of energy used in my home	1	2	3	4	5	6	7
People like me are such a small part of the whole energy consumption picture that it really doesn't matter how I use energy	1	2	3	4	5	6	7
Every home should make a real effort to save energy	1	2	3	4	5	6	7
I would not pay more for a product that was energy efficient.	1	2	3	4	5	6	7
Energy saving has become a widespread practice in California	1	2	3	4	5	6	7
Information and tips on how to save energy in my household are *easy* to find	1	2	3	4	5	6	7
When looking to buy a product that uses energy, my household seeks out the most energy efficient product available	1	2	3	4	5	6	7
Reducing my home energy will help reduce climate change	1	2	3	4	5	6	7

16. Are you aware of any of the following energy saving opportunities? (Check all that apply)

□Rebates and incentives from your utility for energy efficient appliances or for making home improvements
□Energy Audits of your home to find ways to save energy
□The Flex Your Power website: www.fypower.org
□Your electric or gas utilities' website for energy saving information

17. As a follow up to what you learned today, where would you look for more information? (Check all that apply)

□ I will not likely follow-up for more information
□ Visit the Flex Your Power website
□ Call a utility (gas or electric company)
□ Visit a utility website
□ Call the Flex Your Power toll-free number
□ Don't know
□ Other: _____

18. Do you own or rent your home? (Check one)

□ Own □ Rent

19. Which of the following best describes your age? (Check one)

□ Less than 18 years old □ 25-34 years old □ 45-54 years old □ 65 or older
□ 18-24 years old □ 35-44 years old □ 55-64 years old

20. What is the name of your electric utility? (Check one)

□ Pacific Gas and Electric
□ Southern California Edison
□ San Diego Gas and Electric
□ LADWP
□ Other, Please Specify: _____

21. What is your zip code? _____

Thank you for participating in this survey!

F. E-NEWSWIRE

F.1 Detailed Program Findings Memo

MEMO

To: CPUC (for utility and implementer comment)

From: Opinion Dynamics Evaluation Team

Re: e-Newswire Indirect Impact Evaluation Interim Feedback Memo

Date: 04/14/09

Summary of Findings

The Flex Your Power General (FYPG) program promotes energy efficiency messages to customers through a newsletter called the e-Newswire. The e-Newswire is an email-based newsletter sent twice per month to subscribers across California, (and outside of California), promoting "energy efficiency among California businesses, residents and institutions." Early investigation into the goal of the e-Newswire revealed that it is a way for readers to "keep up to date about the current ideas, policies, programs and products that advance energy efficiency in California, as well as important news from other regions." Through our analysis of the e-Newswire, the Opinion Dynamics team sought to determine four primary impact indicators: (1) The reach of the e-Newswire; (2) The education or information typically provided in the e-Newswire; (3) The likelihood that the e-Newswire will induce behavior change amongst its subscribers; and (4) The percentage of subscribers that have changed behaviors as a result of the e-Newswire, either in the form of direct energy saving behaviors and/or indirect behaviors. We analyzed these indicators to assess the indirect impact of the e-Newswire[1]. We found the following key findings:

What is the reach of the e-Newswire?

- The e-Newswire is distributed to 11,825, residential and non-residential customers as of November 2008[2]. Notably, however, the reach of the e-Newswire does extend beyond the individuals on the e-Newswire subscriber list. Many of the active readers (89% of CA residents and 92% of non-CA residents) share the e-Newswire with colleagues, friends, family and customers. In addition, the e-Newswire editions are available on the FYP website and can be viewed by anyone. The e-Newswire targets, or attracts, individuals involved in the energy industry or individuals with a high interest in adopting energy efficiency in their homes and/or businesses.

[1] Our data collection process revealed some process-related findings that are separately reported in Appendix A of this report.

[2] Through our depth interviews with Efficiency Partnership, we realize the e-Newswire has grown quickly in subscribership in the last few years. We plan to show the annual subscriber increase rate for the e-Newswire since its inception in the final report.

- Based on the demographics of active readers who responded to our survey, subscribers likely encounter fewer resource and constraint barriers than the general population, positioning them well to receive and act upon energy efficiency information. Most readers fall between the ages of 35 and 64, own single-family detached homes and are college-educated. This is in line with the FYPG target audience of homeowners and renters between 35 and 64 years of age.
- e-Newswire reaches many individuals in the FYPG program target market, but it also reaches outside of California. Of the active readers that responded to our survey, approximately one in eight (13%) work and live outside of California. The e-Newswire's reach outside of California is likely helping to transform energy efficiency markets in general.
- The e-Newswire is also reaching a diverse set of non-residential customers. Among California's active readers, 23% are government agency employees, 10% work for utilities and 8% are market actors/trade allies.
- Despite the job titles of respondents, the majority of Californian's read the e-Newswire to gain energy efficiency information for their residence (81%). A smaller percentage of Californian's read the e-Newswire to gain energy efficiency information for their actual facility or place of business (49%). Almost all of the active readers (98%) read the e-Newswire to keep abreast of the current events and trends in energy efficiency.
- Our screening process revealed that many subscribers did not qualify for the survey because of their association with the FYP program. Therefore, while the e-Newswire reaches an audience to potentially impact behavior it also serves as a program implementation communication tool for implementers and evaluators alike.

What education or information is provided in the e-Newswire and how is it provided?

- The education or information provided to subscribers can mainly be described as energy efficiency awareness and knowledge building news articles. Two-thirds (66%) of the articles are energy efficiency-related and nearly one-third (32%) describe IOU and 3rd party resource programs. The e-Newswire also announces upcoming events such as courses provided by Energy Centers and other events sponsored by municipalities and associations.
- The e-Newswire educates readers on ways to save energy in two distinct education methods which we describe as: (1) The Initial Information Method and (2) The Taking it Further Method.
  - The Initial Information Method presents news articles that show how others have saved energy where readers learn by example.
  - Almost every news article is followed by hyperlinks to access more information, thus the reader has to "take it further" for more information on how to save energy or more information on a given topic. Most of the hyperlinks direct subscribers to more information on the FYP website (55% of hyperlinks), such as incentives by sector, energy saving tips, product and best-practice guides, or to

news articles posted on external websites (40% of hyperlinks). The data indicates that most active readers (61%) do in fact "take it further" and seek additional information on how to save energy or more information on a given topic in a news article.

What is the likelihood that the e-Newswire will induce behavior change?

- Most active readers, 59% in California and 61% outside of California, stated that the e-Newswire provides useful information.
- Our subscriber survey confirmed that the e-Newswire targets, or attracts, individuals involved in the energy industry or individuals with a high interest in adopting energy efficiency in their homes and/or businesses. Readers are highly exposed to energy efficiency themed messages, very aware of energy saving resources (93% are aware of utility rebates and incentives, 90% are aware of the FYP website)[3] and very knowledgeable of energy efficiency (almost all readers report some or a lot of energy efficiency knowledge prior to subscribing).
- The e-Newswire influence index score[4] calculated for CA readers came to .67, which means the e-Newswire has a good chance of influencing behavior change among active readers. It should be noted that the highly aware and knowledgeable group of individuals that read the e-Newswire might be best described as "energy efficiency champions" for the FYP program. The e-Newswire is one of the program tactics with the ability to greatly encourage word of mouth and "buzz" throughout the recipients' circle of influence or social network. Given that 89% of readers say they share the e-Newswire information with others, the impact of the e-Newswire might be better found in its ability to give readers, acting as energy efficiency champions, a frequent source of energy saving information to share with others in their social network, thus inducing behavior change in non-subscribers that might still be overcoming the initial awareness and knowledge barriers.

What behavior changes have taken place as a result of the e-Newswire?

- The data indicate that the e-Newswire is partly responsible for effectively channeling readers to energy saving informational resources given that the majority of CA readers have visited a utility website (75%), the FYP website (71%) and government websites (51%).
- More than half (61%) of CA readers claim they made energy efficiency changes in their home and only 35% made changes in their business/profession. Lighting upgrades were by far the most common changes influenced by the e-Newswire.

Methodology

Opinion Dynamics utilized primary and secondary data collection methods to support the findings in this section. For primary data collection, Opinion Dynamics conducted an online

[3] We compared utility/market actor/government readers to the other active readers and found no significant differences between the groups.

[4] The Program Influence Index score is explained in detail in the Detailed Findings section of this memo.

survey of e-Newswire subscribers. For secondary data collection, we conducted a content analysis of the e-Newswire.

In November of 2008, Opinion Dynamics fielded an online survey to e-Newswire all 12,290 subscribers. Efficiency Partners distributed an email invitation, on behalf of Opinion Dynamics, to complete the survey and provided a unique URL to the survey for each subscriber. Subscribers were allowed to complete the survey over a two-week period between November 11th and 21st of 2008. As shown by the table below, 465 email invitations "bounced back", therefore we revised the total reach of the e-Newswire to 11,825 subscribers. There were 2,746 subscribers (or 23% of subscribers with valid email addresses) opened the survey. Amongst subscribers that opened the survey, 20% (or 540) attempted to answer the survey. Out of the total valid subscriber base, 5% answered the survey.

Table 1. Subscriber Survey Disposition Report

Outcome	Number
Survey invitations sent	12,290
Survey invitations received (less 465 invalid email addresses)	11,825
Subscribers opened survey invitation	2,746
Subscribers attempted to complete the survey	540

We screened respondents to ensure that respondents were current (received the eNewswire via email for at least 2 months); respondents were not associated with the implementation or evaluation of the FYP programs; and that respondents actively read the eNewswire. Over 500 (actually 540) subscribers attempted to answer the survey while 273 subscribers qualified and completed the full survey. Most of the subscribers who were disqualified for the full survey were either implementing or evaluating the FYP Campaign. It is important to note that the survey data we collected is likely representative of active e-Newswire readers and not necessarily the entire subscriber base.

Table 2. Screening Process Outcome

		Number	Percentage based on total subscribers that attempted to answer the survey (n=540)
Screening Outcome	Helping to implement or evaluate the FYP campaign	159	29%
	Do not read it frequently	30	6%
	Do not currently subscribe to the e-Newswire	20	4%
	Subscribed for less than 2 months	20	4%
	Younger than 18 years old	3	<1%
Survey Outcome	Qualified but terminated	35	6%
	Qualified and completed	273	51%

Viewers of the Flex Your Power Website learn about the e-Newswire directly from the FYP Website homepage by scrolling to the bottom of the page. The homepage offers three of the top headlines in the most recent edition of the e-Newswire and a link to read the full publication. The content below outlines how the e-Newswire is introduced on the FYP homepage (as of February 19, 2008) and demonstrates some of the types of information found in the e-Newswire.

Content 1: e-Newswire Headlines on the Flex Your Power Website's Homepage

Flex Your Power's Email Newsletter

Sales of CFLs Rise to 20% of the Light Bulb Market

Companies Get Cleaner and More Efficient, But Have Much More to Do, Says Report From *GreenBiz.com*

San Diego's First LEED-Certified Restaurant, Pizza Fusion, Opens in May

» **Read the entire Feb. 6, 2008 e-Newswire edition**

Viewers can either read the e-Newswire on the FYP website itself or they can sign up as a subscriber and receive the information via email. Note that our quantitative survey was fielded to the subscribers that receive the e-Newswire via email and did not attempt to survey individuals that read the e-Newswire on the FYP website.

We also conducted a content analysis of 20% of randomly sampled e-Newswires issued in 2006 and 2007. To maintain objectivity in this qualitative assessment, two researchers documented the content of the e-Newswires in a data collection spreadsheet and sorted the news articles into energy-related categories without knowledge of the other's input. The content analysis involved examining each e-Newswire for content such as what information is typically included and who would likely benefit from the information. The table below shows the sampling universe from which we randomly selected issues for analysis.

Table 3. e-Newswire Content Analysis Sample Universe

	Total Issues	Sampled for Analysis
2006 e-Newswires	25	5
2007 e-Newswires	25	5
Total	50	10

Detailed Findings

What is the reach of the e-Newswire and who is it reaching?

As of November 2008, the e-Newswire was distributed to approximately 11,825 subscribers. The reach of the e-Newswire is much greater than this number as many readers (89% of CA residents and 92% of non-CA residents) share the e-Newswire with colleagues, friends, family and customers. We conducted an analysis of the full list of e-Newswire subscribers to understand who the e-Newswire is reaching. As shown in the table, many individuals subscribe to the e-Newswire as residential customers (27%); the government sector is also a large subscriber group (17%), as are utilities (15%) and market actors (11%).

Table 4. e-Newswire Subscriber Base[5]

Subscriber Segments	eNewswire Subscriber Base
Residential Customer	27%
Government	17%
Utility	15%
Market Actor	11%
Commercial Business	9%
Education	7%
Media/Entertainment	5%
Manufacturing	3%
Non-profit agency or association	3%
Consulting	2%
Other-Specify	1%
Grand Total	**100%**

Note that while the e-Newswire reaches many individuals in the FYPG program target market, it also reaches beyond that scope to many individuals and organizations outside of California. Approximately one in eight active readers (13%) said they work and live outside of California. These respondents live in a wide variety of states across the country and some

[5] We categorized 5% of the total company names in the January 2008 subscriber list into the segments shown in Table 4.

even reside outside of the United States. Respondents outside of California indicate that the e-Newswire helps them to keep abreast of energy policy and technology developments. It is likely one of many sources that non-Californian's use to examine California's energy efficiency efforts as a bellwether state in the energy industry.

In addition, many e-Newswire subscribers are associated with the implementation or evaluation of the FYP program in some capacity. Our screening process revealed that many subscribers did not qualify for the survey because of their association with the FYP program. Many subscribers are not necessarily only benefiting from general energy efficiency information and education but also from keeping informed of the FYP program activities. Therefore, while the e-Newswire reaches an audience to potentially impact behavior it also serves as a program implementation communication tool for implementers and evaluators alike.

The e-Newswire readers comprise a very discrete market segment. Due to their demographic makeup, readers likely encounter fewer resource and constraint barriers[6] than the general population making them well-positioned to receive and act upon energy efficiency information. The survey data show that most readers fall between the ages of 35 and 64, own homes, live in single-family detached homes, are college-educated and Caucasian.

To further understand who the active readers of the e-Newswire are, we asked them to describe the business sector in which they work. From our survey, we found that many active readers work for the government (23%) and utilities (10%). Note that our subscriber survey data is somewhat different from the full subscriber base because of our screening criteria, also many respondents likely chose a business sector even through they may have subscribed for the survey as a residential customer. Our screening criteria ensured that the data would represent active readers that are not associated with the FYP program implementation or evaluation. In this respect, we are able to assess the effects of the e-Newswire on the intended end-users of the information.

Table 5. Business Sector Characteristics

What best describes the business sector in which you work?	CA Resident e-Newswire Active Readers	Non-CA Resident e-Newswire Active Readers
Government	23%	22%
Gas/Electric Utility	10%	8%
N/A, Retired, Unemployed	9%	3%
Non-Profit	8%	22%*
Market Actors/Trade Allies[7]	8%	8%
Large Commercial Business	7%	8%
Small Commercial Business	7%	6%

[6] *Fleshed-out Categories on the Four-dimension Table (Mental, Behavioral, Resource and Constraint factors)* Lutzenhiser, L., October 10, 2007

[7] This includes architecture, construction, building and development and engineering.

What best describes the business sector in which you work?	CA Resident e-Newswire Active Readers	Non-CA Resident e-Newswire Active Readers
Education/Institutional	5%	3%
Industrial Business	3%	-
Agriculture Business	2%	-
Retail	2%	3%
Media/entertainment	2%	3%
Manufacturing	1%	6%
Consulting	1%	8%
Other[8]	14%	-

* Indicates a statistically significant difference between groups.

To further investigate the value of the e-Newswire, we asked active readers to state why they subscribe to it. Our survey data show that subscribers read the e-Newswire for multiple reasons but all agree that it allows them to keep abreast of trends and events in energy efficiency. In addition, many Californians (81%) read the e-Newswire to gain energy efficiency information for their actual facility or place of business. Many non-California residents (75%) read the e-Newswire to pass along information to their business clients (75%).

Table 6. Reasons for Subscribing to the e-Newswire (multiple response)

Do you subscribe to the e-Newswire to…	CA Resident e-Newswire Subscribers (n=237)	Non-CA Residents (n=36)
Keep abreast of the current events and trends in energy efficiency?	98%	97%
Gain energy efficiency information for your residence?	81%*	44%
Gain energy efficiency information that you can pass along to your clients?	45%	75%*
Gain energy efficiency information for you facility/place of business?	49%	39%

[8] The other category contains the small number of subscribers who specified their business sector to include: aerospace, banking, defense, health care, law, software development and writers.

What Education or Information is provided in the e-Newswire and how is it provided?

The education or information provided to subscribers can mainly be described as energy efficiency awareness and knowledge building news articles. The news articles cover a broad range of topics such as green building projects, climate change, energy policy, rebate programs and technology. The articles vary greatly, ranging from agricultural water conservation in California's central valley, to the construction of energy efficient office buildings in China. To further understand the topics most communicated through the e-Newswire, we sorted and analyzed the content of each of the news articles in our sample.[9] As shown in the table below, two-thirds (66%) of the articles were about energy efficiency and almost one-third (32%) described IOU and 3rd party resource programs.

Table 7. Information Provided in Articles (n=114 articles, multiple response)

Information Type[10]	% of Articles	Article Headline Example & Date of e-Newswire Edition
Energy Efficiency	66%	"California Lighting Technology Center Brings Energy-Efficient, Affordable Lighting Technologies to Market" 11/15/2006
Resource Programs	32%	"Wisteria, Near Sacramento, Is First Community Approved by California's New Solar Homes Partnership" 7/25/2007
Renewables or Alternative Fuel Sources	24%	"Los Angeles Community College District to Take its Nine Campuses Off-Grid With Solar Power and Fuel Cells" 11/15/2006
Policies	17%	"IRS Releases Guidance on Commercial Building Tax Deduction" 6/14/2006
Water Efficiency	12%	"Bay Area Water Agencies Launch *Water Saving Hero* Conservation Campaign" 7/25/2007
Energy Conservation	12%	"California Nuggets Shut Down its Processing to Curtail Load During Summer 2006 Heat Wave" 7/25/2007
Demand Reduction	11%	"Lockheed Martin's Example Shows the Way to Reduce

[9] Articles could have been categorized into multiple categories. For example if an article mentioned a resource program that was geared toward demand reduction, then the article was sorted into both categories.

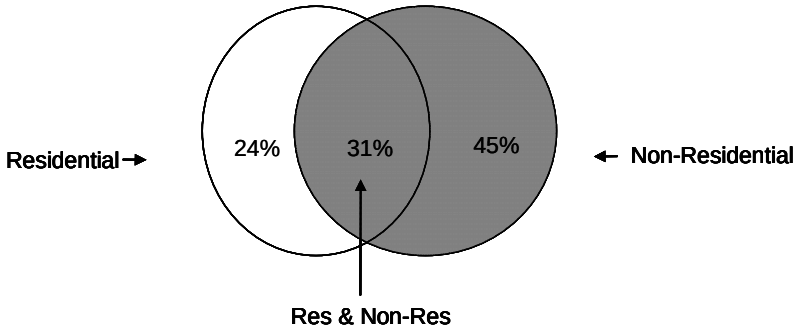
[10] Resource Programs = An article that mentioned an IOU or 3rd party energy efficiency program. Energy Efficiency = An article that mentioned energy efficiency measures such as replacing/purchasing equipment, appliances or building materials. Demand Reduction = An article that mentioned reducing energy demand at peak times or mentioned demand reduction in general. Energy Conservation = An article that mentioned energy conservation practices such as turning off lights or using less water. Global Warming = An article that mentioned global warming, climate change or carbon/greenhouse gas emissions. Policies = An article that mentioned energy policies. Water Efficiency = An article that mentioned water efficiency. Renewable or Alternative Fuel Sources = An article that mentioned renewable or alternative fuel sources such as solar or wind turbines.

Information Type[10]	% of Articles	Article Headline Example & Date of e-Newswire Edition
		Demand This Summer" 6/14/2006
Global Warming	11%	"Home Energy Launches Solar and Energy Efficiency Special Issue" 4/04/2007

Although, the majority of the content covers news-type articles, the e-Newswire also contains a limited amount of other information such as fast facts ("For every 30 million kilowatt-hours of energy saved, 40 to 100 jobs are created, according to energy efficiency studies conducted in North America and Europe." Feb 6, 2008 edition). Notably, the e-Newswire also calls out upcoming events such as courses provided by Energy Centers and other events sponsored by municipalities and associations.

Through our content analysis, we investigated how much information was relevant to residential and non-residential sectors. The news articles provide information for both residential and non-residential sectors, although more articles were catered to the non-residential sector. As shown by the figure below, 69% of the news articles could benefit a residential subscriber while 76% of the articles could benefit a non-residential customer.

Figure 1. Target Audience for e-Newswire News Articles (n=114 articles)



Almost all of the content in the e-Newswire provides ways to save energy for multiple sectors. It educates readers on ways to save energy in two distinct education methods which we describe as: (1) The Initial Information Method and (2) The Taking it Further Method. The Initial Information Method presents news articles that show how others have saved energy where readers learn by example. Under this method the e-Newswire also announces new energy policy reports and/or describes energy events. This method requires the reader to read the article and then contemplate how they can incorporate some of the same practices in their homes or businesses. The Taking it Further Method includes actual links to other educational resources such as tip cards, demand side management programs and/or product guides. Subscribers can click on these links and discover actual ways to save energy

either in the form of instructions, product specifications or programs. Below we describe how e-Newswire educates this market on ways to save energy in more detail.

The Initial Information Method

The e-Newswire uses the Initial Information Method to educate readers on ways to save energy often, as 56% of the articles we analyzed in our content analysis fell into this category. As shown by the summary table below, one of the primary ways that the e-Newswire educates and encourages energy efficient behavior change is by reporting on businesses in California that have already adopted energy efficient measures, either by building green, installing solar panels, retrofitting buildings to improve efficiency of HVAC systems and install cool roofs, participating in programs etc. The e-Newswire shares what others have done and what impact it has had on energy and cost savings. Like-minded businesses can see what others are doing and possibly consider doing something similar with their own business/home. Our content analysis also showed that many of the articles leveraged past and upcoming energy related events in California, and newly released reports or energy efficient standards to encourage readers to think about reducing energy consumption in homes and businesses.

Table 8. Initial Information Education Methods
(n=64 initial information method articles)

Education Method	Description	%	Article Headline Example
Business as a role model	Identifies and describes how a business in California has saved energy and costs either through program participation, adopting energy efficient measures on its own accord, or acquired alternate fuel sources.	47%	"Wyndham Palm Springs Resort Cut Peak Energy Use by 45% During July 2006 Heat Wave" - 6/27/07 Edition
New energy related report or new standards released	Identifies, describes and cites a recent report or paper discussing new findings as they relate to energy consumption. Also identifies, describes and cites new policies or acts recently passed as they relate to energy efficiency.	34%	"California Water Supply Electricity Demand Tops 2,000 MW on Peak Days, Report Says" - 4/4/07
Upcoming or past energy related event	Describes an upcoming or past energy related event.	19%	"Flex Your Power Presents Energy Conservation Summit With Governor Schwarzenegger on June 30 in Southern California" – 6/14/2006

The "Taking It Further" Method

The main content in the e-Newswire is comprised of articles describing current events, market trends and energy efficiency-related hot topics as they relate to residential or non-residential interests. Almost every news article is followed by hyperlinks to access more information, thus the reader has to "take it further" for more information on how to save energy or more information on a given topic. The e-Newswire tailors these links to who the interested reader of an article might be, e.g. if the article describes a new Solar initiative implemented by a school, the links following the article will be tailored to schools and institutions such as links to "energy efficiency resources for schools" and "find rebates, incentives and services for the institutional sector". The table below shows where the hyperlinks often lead a subscriber as discovered in our content analysis. Most of the hyperlinks direct subscribers to more information on the FYP website (55%), such as incentives by sector, energy saving tips, product and best-practice guides, or to news articles posted on external websites (40%).

Table 9. References after Articles (n=259 hyperlinks)

FYP website	External FYP program Story/News Article	Previous e-Newswire or Blog	IOU Websites
55%	40%	3%	2%

Over half of the readers answering our survey (61%) stated that they usually or almost always follow the hyperlinks. While many of the hyperlinks simply allow the reader to access a full news article about a given topic, many of them also allow the reader to access more energy saving information and tips on the FYP website. It stands to reason that at least some of the active readers are accessing the hyperlinks to the website from the e-Newswire. The following section delves deeper into the likelihood that the e-Newswire will induce behavior change.

What is the likelihood that the e-Newswire will induce behavior change?

The likelihood to induce behavior change is assessed in this evaluation by multiple indicators including exposure, awareness, knowledge and an influence index score. For the purpose of this analysis, we narrowed our survey data to only include California residents as that is the program's primary target market for behavior change.

Exposure

As shown in the tables below, the e-Newswire is reaching an audience that is highly exposed to energy efficiency themed messages. Readers are highly exposed to energy saving messages from numerous sources including newspapers and magazines (97%), television shows (90%), and documentaries/movies (88%). Eight in ten respondents (82%) also receive other energy efficiency-themed newsletters in addition to the e-Newswire. As shown in the table below, 77% of respondents claim they are exposed to energy efficiency

information “a lot”. The level of exposure to multiple media sources and the frequency of exposure indicate that e-Newswire readers are attuned to energy efficiency messages and have a pre-disposed interest in and affinity towards energy efficiency.

Table 10. Exposure to Sources of Energy Efficiency Themed Messaging

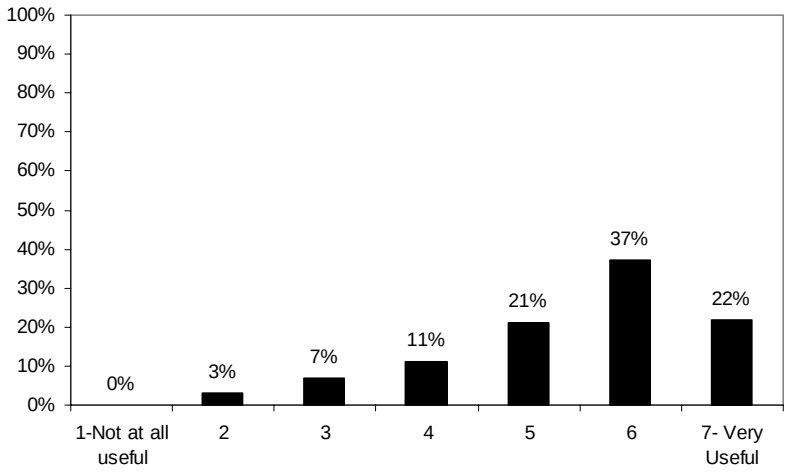
Please indicate if you have seen or heard information on global warming or energy efficiency in any of the following:	CA Resident e-Newswire Subscribers (n=237) % Yes
Newspapers or Magazines	97%
Television news shows	90%
Documentaries and/or movies	88%
Other Newsletters (hard copy or via email)	82%
Talk or news radio	79%
Other types of TV shows	77%

Table 11. Frequency of Exposure to Efficiency Themed Messaging

How much exposure have you had to this type of information (global warming or energy conservation) in the last year? (7-point scale, 1 = very little, 7 = a lot)	CA Resident e-Newswire Subscribers (n=237)
Top 2 (6-7 rating)	76%
Middle 3 (3-5 rating)	23%
Bottom 2 (1-2 rating)	1%

The participants were asked to rate the usefulness of the e-Newswire on a 7-point scale. The data show that most active readers think the e-Newswire provides useful information as 59% of California residents provided a score of six or higher.

Figure 2. Usefulness of e-Newswire Information (n=234)



Awareness/Knowledge

The e-Newswire also communicates energy saving resources to subscribers either via news articles or hyperlinks to the resources. As shown in the table bellow, these resources are successfully communicated to readers as they are highly aware of these resources and compared to the General Residential Population Survey, e-Newswire readers are more aware of energy saving resources. This indicates that the e-Newswire does in fact have a high likelihood to induce behavior change amongst its readers because of its ability to generate awareness and instill knowledge on a frequent basis.

Table 12. Awareness of Energy Saving Resources[11]

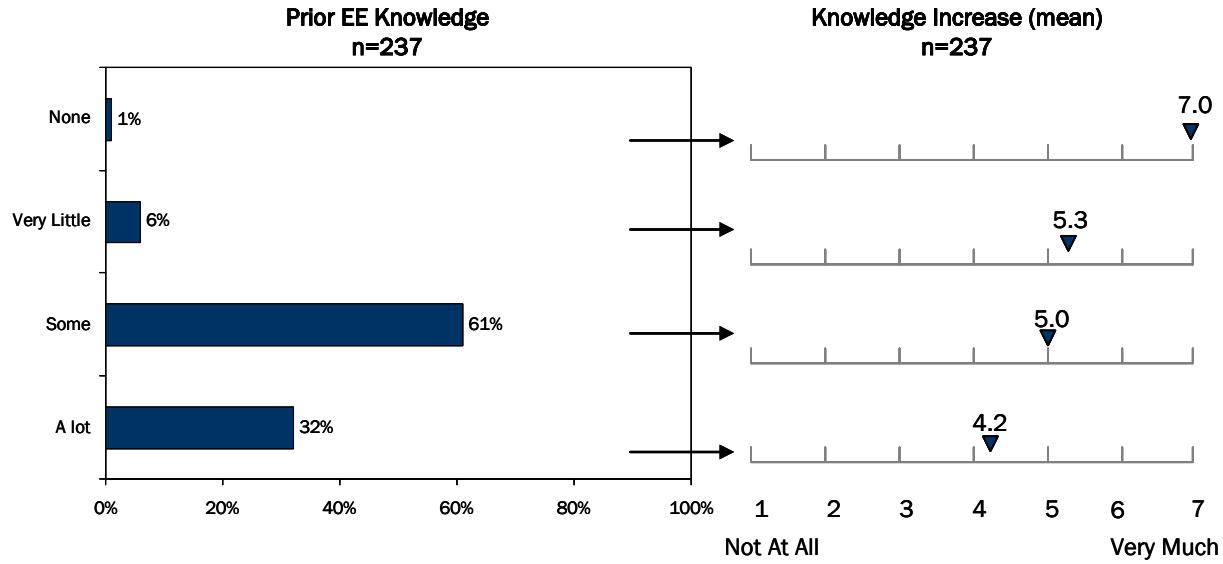
Are you aware of…	CA Resident e-Newswire Active Readers % Yes (n=237)	General Population Survey – Oct 2008 (n=400)
Rebates and incentives from your utility for energy efficient appliances or for making home/business improvements?	93%	72%
The Flex Your Power Website, www.flexyourpower.org?	90%	59%

[11] Note that this data is shown for a qualitative comparison. We are still exploring whether the differences between the groups are statistically significant at a 90% confidence interval.

Are you aware of…	CA Resident e-Newswire Active Readers % Yes (n=237)	General Population Survey – Oct 2008 (n=400)
Energy Audits of your home/business to find ways to save energy?	85%	49%
Your electric or gas utilities' website for energy saving information?	84%	59%

Our evaluation explored subscribers' change in knowledge of energy efficiency due to the e-Newswire. The figure below shows the increase in readers' energy efficiency knowledge categorized by their prior energy efficiency knowledge level. It is notable that most respondents (93%) already had a significant amount (some or a lot) of energy efficiency knowledge prior to receiving the e-Newswire. While only one reader reported having no knowledge of energy efficiency prior to subscribing, this respondent reported the highest level of increase in knowledge due the e-Newswire. Readers reporting very little or some prior energy efficiency knowledge also reported a large increase in knowledge due the e-Newswire. Readers with a lot of prior energy efficiency knowledge reported the smallest increase in knowledge. These data show that the e-Newswire does have the ability to increase energy efficiency knowledge, a necessary step towards following the continuum to actual behavior change.

Figure 3. Impact of e-Newswire on CA Readers' Energy Efficiency Knowledge



Influence Index

To assess the e-Newswire's overall potential to influence energy behavior, we calculated a Program Influence Index score. The index score can be anywhere from 0 to 1, with 0 indicating no influence and 1 indicating a very high influence. We created an index score for each survey respondent based on their response to the following questions:

- How much did the information cause you to think differently about how you save energy?
- How much did the information cause you to want to make changes in the way that you currently save energy?
- How much did the information increase your awareness of ways you can save energy?
- Is the e-Newswire, a bi-weekly newsletter delivered to your email, a good way to inform you of the ways you can save energy?

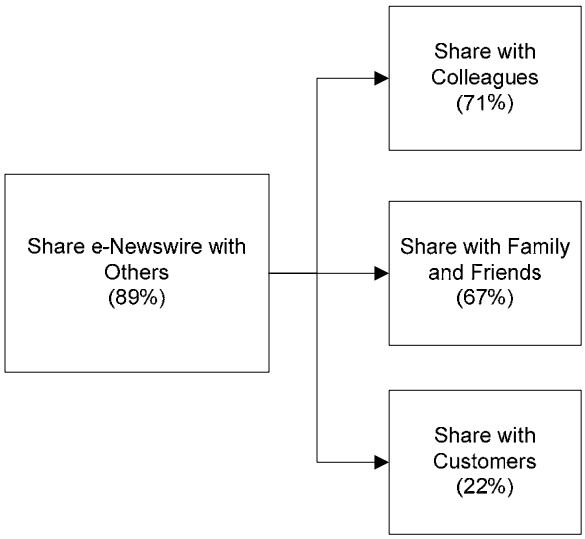
The overall Program Influence Index score is an average of each respondent's individual score. The e-Newswire influence index score for CA active readers measured at .67[12]. This score indicates that the e-Newswire has a good chance of influencing behavior change amongst active readers. The section below analyzes the potentially greater influence that the e-Newswire could have outside of the direct subscriber base.

Impact of e-Newswire beyond the Subscriber Base

The highly aware and knowledgeable group of individuals that read to the e-Newswire might be best described as "energy efficiency champions" for the FYP program. The e-Newswire is one of the FYPG program tactics with the ability to greatly encourage word of mouth and "buzz" throughout the readers' circle of influence or social network. As shown in the figure below, almost nine in ten respondents (89%) say they share the e-Newswire information with others, predominately colleagues, family and friends. Subscribers extend the reach of the e-Newswire to both small and large circles. One respondent stated, "when I find items that are particularly meaningful to my organization, I send them to all 1300 staff with links to other local efforts or examples." Another subscriber claimed to share the e-Newswire frequently with "the members of our Neighborhood Association." The e-Newswire might be giving readers the concrete resources to take energy savings actions in homes and businesses that other sources do not provide. Moreover, the impact of the e-Newswire might be better found in its ability to give readers, who act as energy efficiency champions, a frequent source of energy saving information that can be shared with others in their social network, thus inducing behavior change in non-subscribers that might still be overcoming the initial awareness and knowledge barriers.

[12] Note that this is a preliminary score that will be further explored before the final report.

Figure 4. Sharing e-Newswire in CA Readers' Social Network (n=237)

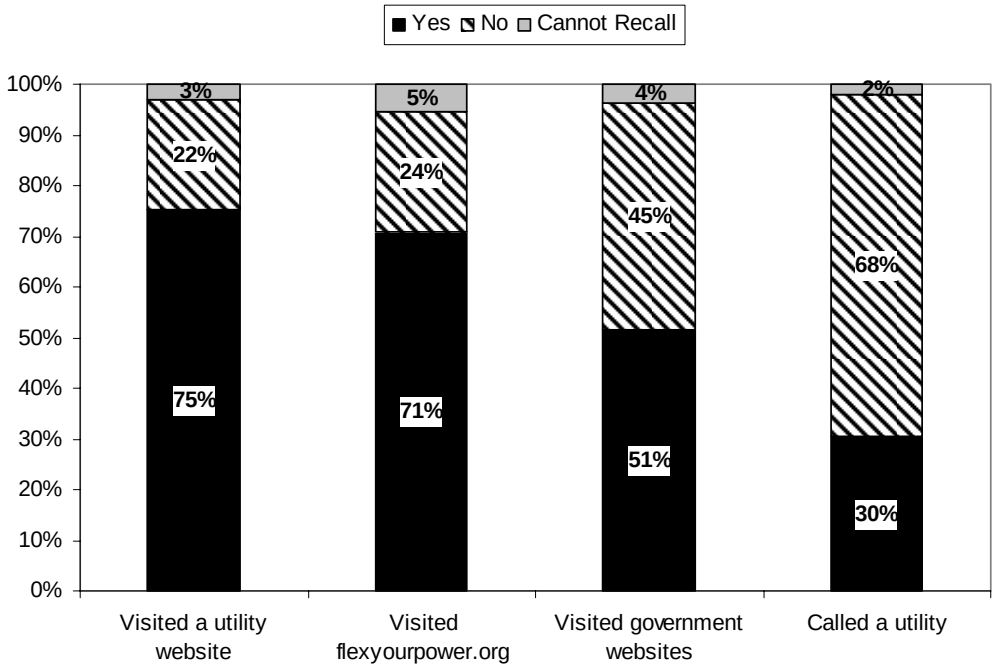


What behavior changes have taken place as a result of the e-Newswire?

As part of this evaluation, we investigated what effects the e-Newswire is having on active readers' indirect and direct energy saving behaviors. Note that our measurement of the indirect and direct energy saving behavior changes that have taken place as a result of the e-Newswire is focused only on CA residents. This is the target market for the FYP program and thus we focus our analysis on the impact of the e-Newswire among California residents and businesses.

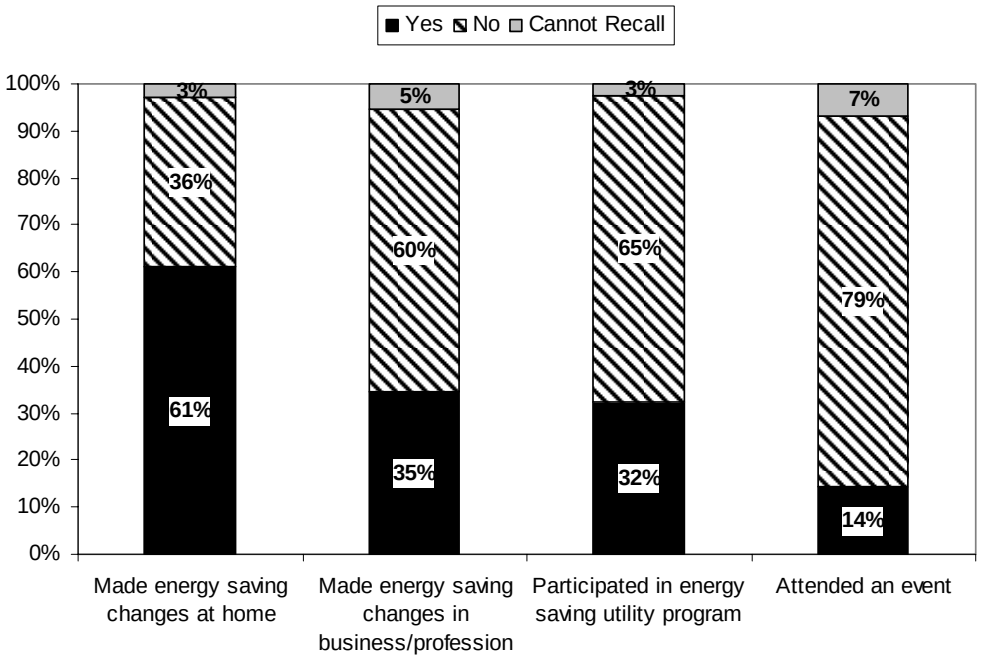
One of the e-Newswire's main functions is to provide subscribers with avenues to pursue further information. As such, we would expect to see the greatest impact of the e-Newswire in indirect behaviors, such as seeking further information through other resources. As shown by the figure below, the majority of readers have visited a utility website (75%), the FYP website (71%) and government websites (51%). It can be surmised that the e-Newswire is partly responsible for effectively channeling readers to energy saving informational resources.

Figure 5. Resources Accessed by CA Active Readers (n=273)



We asked readers whether they have taken any energy saving actions in their home or business and/or participated in utility energy saving programs based on information they received in the e-Newswire. Further we asked if readers have attended any events announced in the e-Newswire. As presented in the figure below, 61% of readers claim they made changes in their home and 35% made changes in their business/profession. Note that only 14% of subscribers have attended an event that was announced in the e-Newswire. Given that the events announced are geographically dispersed across California and vary greatly by topic and target market it is likely not feasible for many subscribers to attend the events or that many events are not of interest to all subscribers.

Figure 6. Actions Taken based on e-Newswire Information
(CA Residents n=237)



Almost two-thirds (64%, n=152) of active readers made energy saving changes in their home and/or business. The e-Newswire was partly responsible for affecting a number of readers' energy efficiency and conservation behaviors. Lighting upgrades are by far the most common changes influenced by the e-Newswire. The following table shows all of the common behaviors that were partly influenced by information received in the e-Newswire.

Table 13. Specific Actions Taken [13]

Actions taken because of e-Newswire information (multiple response)[14]	All CA Survey Respondents (n=237)	Only CA Respondents reported taking action in home/business (n=152)
Energy Efficient Lighting/CFL Usage	35%	55%
Energy Efficient Appliance Acquisition	8%	12%
Disengaging power adaptor/electronics when not in use	8%	13%

[14] Additionally, for CA residents that reported taking action, 2% did each of the following, installed weather stripping, used solar panels, turned their water temperature down, used less heating and air conditioning, and printed efficiently using both sides of paper.

Actions taken because of e-Newswire information (multiple response)[14]	All CA Survey Respondents (n=237)	Only CA Respondents reported taking action in home/business (n=152)
Turning Lights Off in Empty Rooms	7%	11%
Setting Thermostats to Energy Saving Settings	6%	10%
Energy efficient Windows Installment	4%	6%
Home Insulation	3%	5%
Less hot water usage	3%	5%
Appliance Usage During Off Peak Hours	3%	5%
Energy Efficient Heating and Cooling System Installment	3%	4%

While the emphasis of our efforts, and this memo, was to collect impact-related data, through our surveys we also collected process information that may inform the program implementers. Appendix A provides this write up.

Appendix A: Process Related Data

This appendix provides process information that may inform the program implementers. We provide this data below.

Additional Data: The Flex Your Power Website

Many e-Newswire CA resident subscribers (71%) have visited the Flex Your Power website for information. Given this, we asked a few questions regarding the usefulness and effects of the Flex Your Power website in the subscriber survey. The following summarizes the key findings from CA residents that subscribe to the e-Newswire and reported to have access the FYP website.

- Less than half of subscribers (47%) claim the website is "useful", rating it a high of 6 or 7 on a 7-point scale. Given that these subscribers are highly knowledgeable of energy efficiency, they might not find the information as useful as the general population.
- Roughly one-third of subscribers claim the website greatly increased their awareness of energy saving opportunities (36%) or their knowledge of energy efficiency. Again, given that these subscribers are already highly aware and knowledgeable of energy efficiency, they might not be as affected by the information as the general population.

Additional Data: Process-Related Findings

The subscriber survey and the content analysis provided the opportunity to answer some process-related questions regarding the e-Newswire. Our content analysis showed that the amount and variety of information in each issue indicates a high degree of effort to ensure that stories are relevant to this mixed audience. Furthermore, a large amount of effort is going into making sure that energy efficiency and resource program messaging is communicated to this audience. This requires considerable coordination and interaction with IOU's and other parties to extract current information and track updates. Further detail regarding the e-Newswire's content, readability, areas of interest, and suggestions for improvement is provided below.

Content

As shown by the tables below, subscribers read the "news articles" the most often; more than 90% of subscribers indicated they read these articles either "usually" or "all the time." The "fun facts" were the next most read section, with the least being the section on "upcoming energy efficiency events"; however, the majority of respondents still reported that they read the events either usually or all of the time.

Table A.1. Areas of e-newswire Read the Most Often

Specific Area	Never	Rarely	Usually	All the time
Upcoming energy efficiency events	4%	26%	47%	23%

Specific Area	Never	Rarely	Usually	All the time
Fast Facts (For example: "For every 30 million kilowatt-hours of energy saved, 40 to 100 jobs are created")	2%	23%	44%	31%
News Articles	-	6%	61%	33%

Subscribers who reported reading the news articles either "usually" or "all the time" were further asked to specify the types of articles that interested them the most. Technology and products emerged as the most popular category; however, the category "Rebates, incentives and services" and "Renewable energy" were also high on the list. "Demand response" proved to be the least popular with subscribers, with just one-third indicating that it was one of the areas of most interest to them.

Table A.2. Types of News Articles of Most interest to Subscribers (multiple response)

Type of News Articles	% Yes (n=255)
Technology and products	75%
Rebates, incentives and services	73%
Renewable energy	73%
Green Building	61%
Water efficiency	59%
Success stories	56%
Climate change	49%
Policy	47%
Demand response	33%

Notably, the e-Newswire calls out upcoming events such as courses provided by Energy Centers and other events sponsored by municipalities and associations. This indicates that Statewide marketing efforts are actively coordinating with IOUs and 3rd parties to increase participation in energy efficiency events across the state. The evaluation team assessed each announcement by categorizing the upcoming event sponsors. In our content analysis, we found that 40% of the events were sponsored by IOUs and 60% were sponsored by numerous 3rd parties including SMUD, ACEEE, AEE, Silicon Valley Leadership Group and many others. Almost all of the events were located in CA (90%), however some events were conducted outside of CA such as The Energy Efficiency Finance Forum in Arlington, VA and the Great Energy Efficiency Day in Washington DC. Most of the time, the e-Newswire

carefully places 15 upcoming events in each edition that are dated within 1 month of the issues date. However, four of the issues in our sample did list events that were not updated and instead included events that already took place.

Readability & Format

Most e-Newswire participants likely read the content online, either embedded in an email or on the FYP website. Flesch-Kincaid readability statistics, as part of the Microsoft Word program, are a useful indicator of how well online content is written for a given audience. According to web writing experts[15], the readability statistics can draw attention to possible problems in the general writing style of the document when the Flesch Reading Ease score is greater than 60, or the Flesch-Kincaid Grade Level score is greater than 5 - 7 (for younger readers), 5 - 9 (general readers) or 7 - 12 (industry or technical readers).

Notably the Flesch-Kincaid Grade Level score often needs to be lower for Web content than for hardcopy material, because of physiological factors (eg. decreased reading speed and comprehension, increased fatigue). The ODC team assessed the reading ease and grade level of our sample of e-Newswires. Given the criteria for Web content outlined above, the e-Newswire scored well for reading ease but might be too sophisticated for the audience. The grade level statistics indicate that an industry/technical reader may have slight difficulty with the reading ease when reading online and general readers would have even more difficulty. Therefore, the average residential consumer may find the e-Newswire difficult to read and comprehend.

Table A.3. Flesch Readability Statistics

Date of Issue in Sample	Flesch Reading Ease	Flesch-Kincade Grade Level
May 3, 2006	29.1	14.3
June 14, 2006	28.3	14.5
September 21, 2006	24	15.4
October 18, 2006	29.3	14.2
November 15, 2006	25.3	15.2
March 7, 2007	27.5	14.8
April 4, 2007	24.2	15.3
May 16, 2007	23.7	15.1
June 27, 2007	28	14.8
July 25, 2007	23.3	15.3
Total Sample Average	**26.3**	**14.9**

[15] www.kerryr.net

Our subscriber survey asked respondents whether information was easy to find and comprehend in the e-Newswire. As shown in the table below, only 65% of respondents indicated that the information is easy to comprehend and 54% indicated information is easy to find in the e-Newswire. This finding further supports that some areas of improvement are likely necessary to help readers find information and comprehend the information.

Table A.4. Subscriber Perception of Readability

Do you agree or disagree with the following statements about the eNewswire. (7-point scale, 1=strongly disagree, 7=strongly agree)	Top 2	Middle 3	Bottom Two
Information is easy to find	54%	43%	3%
Information is easy to comprehend	65%	33%	2%

In addition, the layout of the e-Newswire emerged as the largest complaint in the subscriber survey. One subscriber stated that it is "very busy with so much text and is difficult to digest and sort all the information." Another subscriber requested to "change the look of the 'front page' because it is too overwhelming". The table below shows that most subscribers did not have any suggestions for improving the e-Newswire. However, several subscribers offered suggestions to improve the layout, shorten the content, make it less technical and include more tips for how to save energy.

Table A.5. Subscribers' Suggestions for e-Newswire Improvement

Recommendations for how to improve the eNewswire? (mult response)	% Yes (n=273)
No suggestions	77%
Make it easier to read / more user friendly	8%
Shorten or send less frequently	3%
Less technical info / more residential focused	2%
More tips on how to save energy and money	2%
Other	8%

Process-Related Recommendations

- FYP should ensure that each issue includes an up-to-date event list and includes events that will take place not only in the upcoming weeks, but also in the next one or two months of the issue date.
- FYP might benefit from a more targeted approach for disseminating the information. One approach might be to segregate the newsletter into two sections: one section for simple residential information and another for more complex commercial information.

- An effort should be made to adjust the format so that it is aesthetically cleaner and easier to navigate. Some ways the layout could be improved are:
  - Since readers tend to read the upper left corner first, the first upper left corner should include something directly tied to an action that a reader should take such as an energy tip or an upcoming event.
  - Include a summary of what's in this issue that includes a Table of Contents linked by section titles so one can easily jump to events or key resources from the upper left.

Appendix B: e-Newswire Subscriber Demographics

Table B.1. e-Newswire Subscriber Demographics

Demographics	CA Resident e-Newswire Active Readers	Non-CA Resident e-Newswire Active Readers
Age	n=237	n=36
18-34	17%	11%
35-44	16%	33%*
45-54	30%	33%
55-64	29%*	17%
65 and Up	8%	6%
Home Ownership	n=237	n=36
Own	75%	86%*
Rent	24%	14%
Residence Type	n=237	n=35
A one-family home detached from others	69%	83%*
A one-family home attached to other housing	8%	6%
Building with 2 apartments	5%	3%
Building with 3 or more apartments	16%	-9%
A Mobile Home	2%	- -
Other	1%	- -
Education Level (1% or more)	n=236	n=36
Graduate or Professional Degree	36%	69%*
College Diploma	46%*	31%
Some College, no Diploma/High School Diploma/GED	18%	- -
Household Income	n=216	n=32
Under $34,999	7%	- -
$35,000 - $49,000	8%	16%
$50,000 - $74,999	22%	25%
$75,000 - $99,999	18%	19%
$100,000 - $199,999	36%	34%
Over $200,000	9%	6%
Ethnicity (3% or more)	n=225	n=35
White/Caucasian	87%	94%
Hispanic/Latino	5%	6%
African American/Black	3%	6%
Native American/American Indian/Alaskan Native	2%	6%
Chinese	2%	3%

* Indicates a statistically significant difference at 90/10 between groups.

F.2 Data Collection Instrument

eNewswire Web-Based Survey

This survey will be fielded to a sample of individuals who received the Flex Your Power eNewswire as of October 2008. We will screen these individuals for people who:

- Are current subscribers (have received the eNewswire via email for at least 2 months);
- Are not currently associated with the implementation or evaluation of the FYP Campaign; and
- Actively read the eNewswire.

This survey will be an online survey that will be distributed via email, providing a URL to the survey for each recipient. Efficiency Partners will send an email to each recipient on behalf of ODC.

This survey gains information on the value of the eNewswire by examining the:

- Usefulness of the eNewswire for home and/or business purposes;
- Impact of the eNewswire on knowledge, attitudes and awareness;
- Exposure to other energy saving information;
- Energy saving actions taken in homes or businesses;
- The value readers gain from the eNewswire;
- Who the eNewswire subscribers are (i.e. residents, businesses, market actors, energy efficiency expertise level, and other demographics);
- Awareness of other FYP and utility energy saving resources;
- How often the information is shared and with whom.

We've also added a section, titled "readability', to this survey that is process related. This section will help Efficiency Partners determine if any changes are necessary with regards to which topics they should emphasize, the comprehensiveness and/or the layout of the information. We plan to give Efficiency Partners an opportunity to add questions to this section for their own purposes if necessary.

It is assumed that eNewswire readers access the FYP website often, as this is likely the way they initially signed up for the eNewswire and the eNewswire often provides links to website information. Therefore, this survey gathers feedback on the FYP website. Based on this feedback, we will determine the need for further website research.

Introduction

Thank you for your willingness to participate in an online survey related to the Flex Your Power eNewswire. This survey should only take 5 to 10 minutes of your time. This survey is sponsored by the California Public Utilities Commission. Your responses will greatly contribute to our understanding of how energy efficiency information is used in California.

Screener Questions
[PLACE 5 SCREENER QUESTIONS ONE FIRST PAGE AND TERMINATE AFTER RESPONSES ARE ENTERED IF APPLICABLE]

S1. Do you currently subscribe to receive the Flex Your Power eNewswire Newsletter via email?

1. Yes
2. No [TERMINATE AFTER S5]
3. Don't Know [TERMINATE AFTER S5]

S2. Are you helping to implement or evaluate the Flex Your Power Campaign in California?

1. Yes [TERMINATE AFTER S5]
2. No
3. Don't Know

S3. Which of the following best describes your age?

1. Less than 18 years old [TERMINATE AFTER S5]
2. 18-24 years old
3. 25-34 years old
4. 35-44 years old
5. 45-54 years old
6. 55-64 years old
7. 65 of older

S4. How long have you subscribed to the eNewswire?

1. Less than two months [TERMINATE AFTER S5]
2. More than two months but less than a year
3. About 1 year
4. About 2 years
5. More than 2 years
6. I do not subscribe to the eNewswire

98. Don't know

S5. The eNewswire is typically issued twice per month, or every two weeks, which of the following **closely** describes how often you read the Flex Your Power eNewswire? [TERMINATE IF RATING IS 1 OR 2]

I receive the editions, but do not read them	I have read 1 or 2 editions	I read less than half of the editions I have received but more than 1 or 2	I read half of the editions I have received	I read more than half of the editions I receive but not all	I read almost every edition I receive
1	2	3	4	5	6

[TERMINATE IF S1=2 OR 3, OR S2=1, OR S3=1, OR S4=1, OR S5=1 OR 2]

Readers

R1. Do you subscribe to the eNewswire to….

	Yes	No
a. Gain energy efficiency information for your **residence**?		
b. Gain energy efficiency information for you facility/place of **business**?		
c. Gain energy efficiency information that you can **pass along to your clients**?		
d. Keep abreast of the **current events** and trends in energy efficiency?		

R2. If you subscribe to the eNewswire for a reason that was not mentioned in the previous question, please describe your reason for subscribing to the eNewswire in the text box below. [INSERT TEXT BOX]

R3. Do you work in California?

1. Yes
2. No

99. Not applicable

R4. Where is your permanent residence?

1. In California
2. Outside of California

[ASK IF R4 =2]

R5. In what state do you live? [INSERT DROP DOWN LIST OF STATES]

Awareness

AW1. Are you aware of…

	Yes	No
a. Rebates and incentives from your utility for energy efficient appliances or for making home/business improvements?		
b. Energy Audits of your home/business to find ways to save energy?		
c. Your electric or gas utilities' website for energy saving information?		
d. The Flex Your Power Website, www.flexyourpower.org?		
e. The Flex Your Power Toll-Free telephone number?		

Knowledge, Usefulness of Information and Exposure

K1. In general, how useful do you find the information provided in the eNewswire

Not At All Useful						Very Useful	Don't Know
1	2	3	4	5	6	7	8

K2. What best describes your knowledge of energy efficiency BEFORE subscribing to the eNewswire?

1. I had no knowledge
2. I had very little knowledge
3. I had some knowledge
4. I had a lot of knowledge

	Not At All						Very Much	Don't Know
K3. How much has your knowledge of energy efficiency increased based on the information provided in the eNewswire?	1	2	3	4	5	6	7	8

K4. Please indicate if you have seen or heard information on global warming or energy efficiency in any of the following:

	Yes	No	Don't Know
a. Documentaries and/or movies			
b. Television news shows			
c. Other types of TV shows			
d. Talk or news radio			
e. Newspapers or Magazines			
f. Other Newsletters (hard copy or via email)			

K5. How much exposure have you had to this type of information (global warming or energy conservation) in the last year?

Very Little Exposure – Have Seen/Read/Heard information once but cannot recall much more than that						A Lot of Exposure – Have Seen/Read/Heard information many times and can readily describe it	Don't Know
1	2	3	4	5	6	7	8

Level of Influence

LI1. Based on your experience reading the eNewswire, how much did the information…

	Not At All						Very Much	Don't Know
a. Cause you to think DIFFERENTLY about how you use energy?	1	2	3	4	5	6	7	8
b. Cause you to want to make changes in the way that you currently use energy?	1	2	3	4	5	6	7	8
c. Increase your awareness of ways you can save energy?	1	2	3	4	5	6	7	8

LI2. Is the eNewswire, a bi-weekly newsletter delivered to your email, a good way to inform you of the ways you can save energy?

Not At All						Very Much	Don't Know
1	2	3	4	5	6	7	8

Actions Taken

AC1. Have you taken any of the following actions based on information you received in the eNewswire?

	Yes	No	Cannot Recall
a. Attended an event that was announced in the eNewswire			
b. Participated in an energy saving utility program, such as a rebate program			
c. Made energy saving changes in your business or in			

your profession			
d. Made energy saving changes in your home			

[ASK IF EITHER AC1C OR AC1D = YES]
AC2. What specific changes did you make to your business OR HOME, or in your profession, because of information that you received in the eNewswire? [OPEN END]

AC3. Have you accessed any of the following resources for more information about how you can save energy?

	Yes	No	Cannot Recall
a. Visited a utility website			
b. Visited the Flex Your Power website			
c. Called a utility (gas, electric or water company)			
d. Visited government websites such as the California Energy Commission or the California Public Utilities Commission			

AC4. How often do you share the information in the eNewswire with others?

Never						Almost every issue I receive	Don't Know
1	2	3	4	5	6	7	8

[ASK IF AC4 = 2-7]
AC5. With whom do you share the information? (Select all that apply)

1. Friends and family
2. Colleagues
3. Customers
4. Others (Please specify) [OPEN TEXT]

Readability

RE1. Do you agree or disagree with the following statements about the eNewswire:

	Strongly disagree						Strongly agree	Don't Know
Information is easy to find	1	2	3	4	5	6	7	8
Information is easy to comprehend	1	2	3	4	5	6	7	8

RE2. When you read an eNewswire, how often do you read through these parts of the eNewswire?

	Never	Rarely	Usually	All the time	Don't know
a. Upcoming energy efficiency events	1	2	3	4	5
b. Fast Facts (For example: "For every 30 million kilowatt-hours of energy saved, 40 to 100 jobs are created")	1	2	3	4	5
c. News Articles	1	2	3	4	5

[ASK IF RE2c>2]
RE3. In which type of news articles are you most interested? (Select all that apply)

1. Success Stories (Headline Example: "Honeywell to Reduce Utility Bills by at Least 15% at U.S. Coast Guard Facilities Across California")
2. Rebates, Incentives and Services
3. Green Building
4. Technology and Products
5. Policy
6. Demand Response
7. Renewable Energy
8. Water Efficiency
9. Climate Change

[ASK IF RE2c>2]
RE4. Often the news articles have hyperlinks which you can click on to access other websites with further information on the topic in the news article. How often do you typically click on these hyperlinks?

1. Never
2. Seldom
3. Usually
4. Nearly all the time

98. Don't know

RE5. Do you have any recommendations for how to improve the information in the eNewswire? [OPEN TEXT]

Flex Your Power Website [ASK IF AC3b = YES]

F1. You indicated that you have visited the Flex Your Power website. Please answer the following to the best of your ability:

	Not At All						Very Much	Don't Know
a. In general, how useful do you find the information provided on the	1	2	3	4	5	6	7	8

website?								
b. How much has your awareness of energy saving opportunities increased based on information provided on the website?	1	2	3	4	5	6	7	8
c. How much has your knowledge of energy efficiency increased based on the information provided on the website?	1	2	3	4	5	6	7	8

F2. Do you have any suggestions for improving the information provided on the website?
[OPEN TEXT BOX]

Demographics

D1. What is your zip code?
[OPEN TEXT]

Residential

D2. Do you own or rent your home?

1. Own
2. Rent

100. Other [Please specify]

D3. In what type of building do you live?

1. A mobile home
2. A one-family home detached from any other house
3. A one-family home attached to one or more houses
4. A building with 2 apartments
5. A building with 3 or 4 apartments
6. A building with 5 or more apartments

99. Other, Specify [OPEN TEXT]

D4. What is the highest level of education you have completed?

1. No schooling
2. Less than high school
3. Some high school
4. High school graduate or equivalent (e.g., GED)
5. Some college, no degree
6. Collect graduate degree
7. Graduate or professional degree

99. Other [OPEN TEXT]

D5. Which of the following best represents your annual household income from all sources in 2007, before taxes?

1. Less than $25,000
2. $25,000-34,999
3. $35,000-49,999
4. $50,000-74,999
5. $75,000-99,999
6. $100,000-149,999
7. $200,000 or more

D6. Are you of Hispanic, Latino, or Spanish origin?

1. Yes
2. No

98. Don't Know

D7. What is your ethnicity? [Select all that apply]

1. White
2. Black or African American
3. American Indian or Alaska Native
4. Asian Indian
5. Chinese
6. Japanese
7. Korean
8. Vietnamese
9. Filipino
10. Other Asian
11. Native Hawaiian
12. Guamanian or Chamorro
13. Samoan
14. Other Pacific Islander
15. Hispanic/Latino

99. Other [OPEN TEXT]

D8. If applicable, what types of energy related services or equipment does your business provide? [If this question does not apply to your line of work, please **click here** to skip to the next question] [INSERT SKIP OPTION]

	Yes	No
a. Construction		
b. Engineering or architectural design		
c. Lighting design assistance, sales, installation		
d. HVAC equipment sales, installation, repair or maintenance		
e. Refrigeration equipment sales, installation, repair or maintenance		
f. Motor equipment sales, installation, repair or maintenance		
g. Pumping/hydraulic equipment sales, installation, repair or maintenance		

h. Other equipment sales, installation, repair or maintenance (Specify)		
i. Facility operations or maintenance		
j. Energy technology research/consulting		
k. Other [OPEN TEXT]		

D9. Which of the following best describes your job or business?

1. I/My business provides services to **business** customers.
2. I/My business provides services to **residential** customers.
3. I/My business provides services to **business and residential** customers.
4. I work for the government

99. Other [OPEN TEXT]

D10. What best describes the business sector in which you work?

1. Government
2. Architecture
3. Construction, Building and Development
4. Engineering
5. Large Commercial Business
6. Small Commercial Business
7. Non-Profit Organization
8. Gas, Electric or Water Utility
9. Industrial Business
10. Agricultural Business
11. Institutional Business

99. Other [OPEN TEXT]

D11. What is your job title?
[OPEN TEXT]

Thank you for participating in this survey!