2008 FLEX ALERT CAMPAIGN EVALUATION REPORT

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SUMMIT BLUE CONSULTING, LLC

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E.1 Program Background

The Flex Alert: Save Energy Now! campaign focuses on achieving voluntary peak demand reductions on days when the California Independent System Operator (CAISO) determines that there is a risk that electricity supply may not be sufficient to meet demand. The campaign uses a mass media implementation strategy to ask Californians to reduce peak electricity use on critical days. The Flex Alert campaign is co-branded with the broader Flex Your Power (FYP) campaign, which promotes the purchase of energy-efficient appliances and products. The FYP and Flex Alert campaigns operate across the state of California, spanning the territory of the major investor-owned utilities.

The Flex Alert campaign is designed to build awareness of energy saving/shifting actions that Californians can take during hot summer afternoons and particularly when a Flex Alert is called by CAISO. The three major conservation actions promoted are turning off unnecessary lights, setting the thermostat to 78 degrees or higher, and delaying the use of energy-consuming appliances such as dishwashers until after 7 PM. A Flex Alert is issued when CAISO officials decide that demand for electricity could outstrip supply on a particular day, possibly leading to brown-outs. Flex Alerts are typically issued the day before or the day of the possible system emergency, via radio and TV commercials, email "blasts," electronic message boards (e.g., those that display public messages such as Amber Alerts), and increasingly through the news media. The Flex Alerts typically ask Californians to voluntarily reduce their electricity consumption during the peak hours (2-7 PM) by taking any of the recommended actions listed above.

The terminology used to identify the program itself and the events have gone through several iterations across the lifetime of the program. In this report, the program is referred to as the Flex Alert campaign and an event is referred to as a Flex Alert.

See Section 1 for more on the program background.

E.2 Evaluation Methods

The evaluation methods used included:

- **In-depth monitoring and assessment of the Flex Your Power, CAISO, and IOU websites** and all relevant Flex Alert communications from FYP and CAISO during the July 8-10 Flex Alert.
- **Analysis of FYP, CAISO, and IOU website traffic** during the Flex Alert.
- **In-depth monitoring and review of news media coverage** of the Flex Alert, including television, newspaper, and social media/blog coverage.
- **Process interviews** with the program implementer and a CAISO representative to better understand the campaign's goals and changes in strategies from previous years.
- **Focus groups** to assess customer response to the Flex Alert messaging and to explore alternative target audience segmentation strategies.
- **Post-event survey** conducted immediately after the July 2008 Flex Alert to assess Californians' awareness of and response to the event.

- **Indirect impact analysis** based on the results of the post-event survey to quantify the Flex Alert impact.

See Section 2 for more on the evaluation methodology.

E.3 Key Findings

E.3.1 Review of Communications and News Media Coverage

The Summit Blue evaluation team conducted a thorough review of the communications from the Flex Alert campaign as well as media coverage of the event. Documents and sources reviewed included: the CAISO press release, CAISO website, Flex Your Power website, subscriber emails from the Flex Alert campaign, the IOU websites, and various news websites. A news gathering service, Nationwide News Monitors, was employed to gather videos and transcripts of relevant television news broadcasts. Collective Intellect provided an in-depth review of the social media coverage of the Flex Alert, including blogs, message boards, and news websites. Summit Blue also analyzed traffic to the CAISO, FYP, and IOU websites during the July 2008 Flex Alert.

Full results of these efforts are presented in Section 3: Review of Communications from the Flex Alert Campaign, CAISO, and the Investor-Owned Utilities, and Section 4: Review of Media Coverage of July 2008 Flex Alert Event. Key findings from this review include:

- A noticeable improvement occurred in message consistency among the Flex Your Power, CAISO, and IOU communications, compared to the message consistency during the August 2007 Flex Alert (discussed in Summit Blue's 2007 evaluation report). Each entity used the term "Flex Alert," although some also added the phrase "Conservation Alert." The SCE and SDG&E websites used the proper "Flex Alert: Save Energy Now!" logo. The CAISO website featured a "Conserve-o-Meter" which pointed to "Needed" during most of the Flex Alert, but there was no Flex Alert logo or conservation tips.

- While there has been significant improvement in the consistency of the IOU websites' display of the alert message, there is still room for improvement. Each IOU website displayed that an alert was in effect; however, some of the alerts were cluttered amongst other messages and did not "jump off" the page. Both the PG&E and SDG&E websites linked directly from their home page to the Flex Your Power website where conservation tips are provided, but there was little suggesting to the visitor that they should click on those links to find the conservation tips. The SCE website did encourage visitors to "learn more," a link that took them to another page within the SCE website, but the conservation tips were buried in a relatively text-heavy page.

Table E-1. Summary of FYP, IOU, and CAISO Website Features

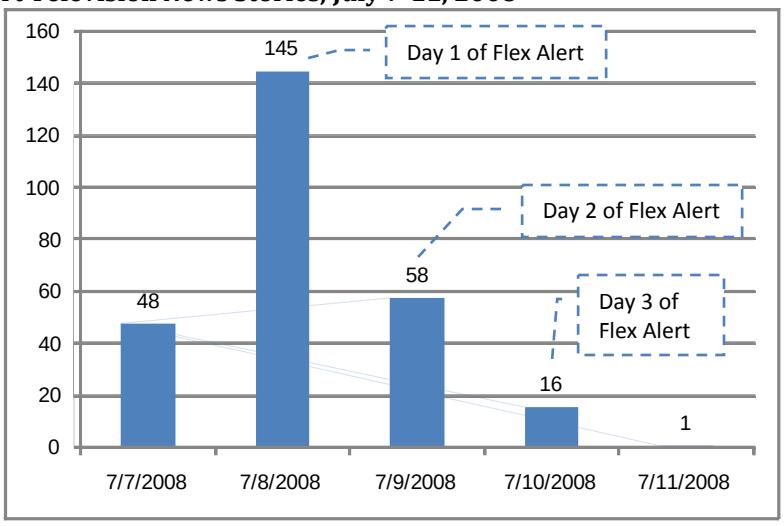
	CAISO	FYP	SDG&E	SCE	PG&E
Prominent call for energy conservation on homepage		✓	✓	✓	✓
Flex Alert logo		✓	✓	✓	
Energy conservation tips		✓		✓	
Link to FYPower.org for more information		N/A	✓		✓
Explanation of need for energy conservation		✓		✓	
Information on peak demand	✓	✓			

- While the FYPower.org website is a strong resource for energy efficiency education and tips, the website is not fully accessible during critical times. Several times during the Flex Alert period, Summit Blue staff were unable to access the Flex Your Power website, suggesting higher traffic than the website could manage. Website traffic statistics indicated that the number of unique visitors to the Flex Alert webpage spiked to over 35,000 on the second day of the three-day Flex Alert during July 2008.

- The email and text messaging channels do not appear to be working as intended. While individual email subscribers received notification of the Flex Alert event, corporate email subscribers did not receive a unique corporate email; nor did text message subscribers receive any message at all. The email notification that went to subscribers had fewer details than the email that was sent through the "Send the Alert to a Friend!" mechanism on the website. Also, the "friend" emails did not list the three conservation actions, but directed the reader to the Flex Your Power website for more details.

- There was significant media coverage of the Flex Alert during the beginning of the week when the Flex Alert was "breaking news," but over the course of a three-day Flex Alert, the number of TV news stories on the topic declined significantly. Nevertheless, one can conclude that the decline in news coverage reasonably reflected the changing circumstances, as temperatures did not reach the highs expected in many regions and demand remained under control.

Figure E-1. Flex Alert Television News Stories, July 7-11, 2008

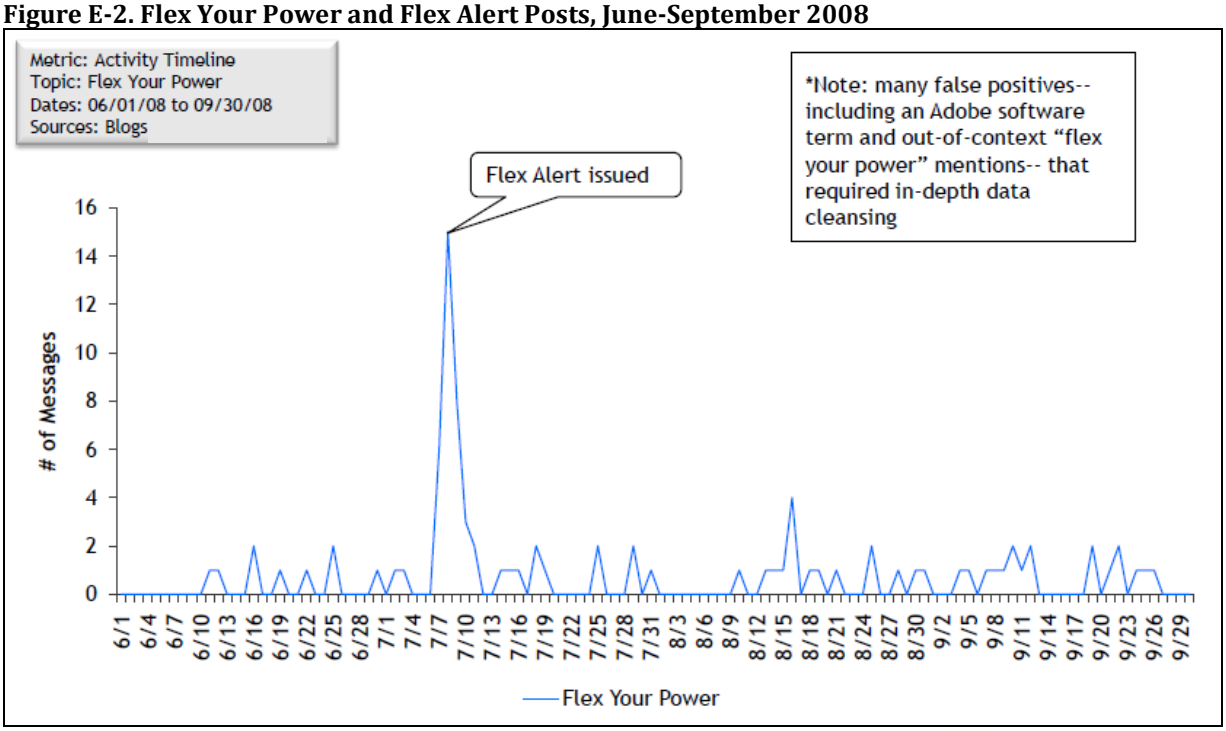


- There was a wide variation in the number of TV news stories by network affiliation. ABC affiliates showed significantly more stories related to the Flex Alert than did the other stations (about 9.2 stories per station). In contrast, the FOX affiliates showed about 4.1 relevant stories per station over the course of the Flex Alert event.

- The media generally represented the intentions of the Flex Alert campaign accurately, using the correct "Flex Alert" terminology and focusing on the three major requested conservation actions: set thermostats to 78 degrees or higher, turn off unneeded lights, and wait until after 7 PM to use major appliances. This is in marked contrast to what was observed in the 2007 evaluation, when the news media used widely varying and potentially misleading terms to describe the event.

- Online activity (e.g., blogging) related to the Flex Alert concept unsurprisingly increased dramatically during the July 2008 Flex Alert, but remains relatively insignificant for a large statewide event. Many of the sources were news stories or simple repostings of the Flex Alert announcements without much commentary, but a few blog posts started a dialogue regarding FYP and energy policy. This type of online presence represents a strong opportunity for engaging with citizen journalists to humanize the event, e.g., sharing success stories and experiences with the Flex Alert event.

Figure E-2. Flex Your Power and Flex Alert Posts, June-September 2008



E.3.2 Process Interviews

Summit Blue conducted process interviews with the Flex Your Power/Flex Alert program implementer, Walter McGuire, and a media representative from CAISO, Gregg Fishman. Key findings from the process interviews include:

- The program implementer stated that the 2008 Flex Alert campaign was not modified significantly from the 2007 campaign, but some of the recommendations from the 2007 evaluation were implemented and more changes are in store for the 2009 campaign. The campaign did place increased emphasis on educating inland California residents, in response to the recommendation from the 2007 evaluation to focus on the regions with higher temperatures and higher saturations of air conditioners.

- The CAISO representative indicated that CAISO values the Flex Alert campaign as one tool to keep electricity supply and demand in balance when unforeseen events such as heat waves, wildfires, transmission problems, and forced outages threaten the reliability of the power grid. In the representative's opinion, the Flex Alert campaign will continue to gain credibility by issuing alerts sparingly (avoiding the appearance of "crying wolf") and by using positive messaging that reinforces the positive outcomes of the campaign.

E.3.3 Focus Groups

Summit Blue retained Braig Consulting to conduct focus groups in California on August 19-21, 2008, providing continuity as Braig Consulting also conducted the 2007 focus groups. Full results of the focus groups are presented in Section 6. Key findings include:

- Consumers advised that the messages incorporate more "relatable" scenarios and information in order to increase the likelihood of inducing action. "Make the message relatable" was a clear mantra not heard last year. People argued that relatability can be increased using either a negative (consequences of inaction) or a positive (little things that matter without hardship) frame.

- The primary take-away from both the Flex Alert and the Reminder/Thank You ad was generally to save energy and conserve. Consistent with last year's findings, the immediate *and finite* timeframe is not getting across well for the Flex Alert. Many respondents felt the purpose of the Reminder message was to increase consciousness and self-analysis of own energy usage behavior.

- Quantification is strongly desired across all respondents. Consumers would like to know the amount of money/energy California saved on a given Flex Alert day. Alternatively, some argued that the message should cast the desired actions as a benchmark, so one can compare their own behaviors to the benchmark. They want their choices explained and to understand what power-using devices are equivalent – e.g., running a load of laundry = cooling a room of Y by Z dimensions, or a microwave a dinner = X # hours of TV. This way, tradeoffs can be assessed.

- Using community notions to spur participation is powerful, but has to be more about everyone being in this together (including corporations as part of the community and doing their part) versus generically invoking "pride." Communal efforts imply that everyone is doing their part and the sacrifice is being spread around, which is different from pride. A local community feel makes the requested actions also feel more doable and makes impacting global warming a more concrete and believable claim.

- Many people do not understand how electricity is produced or how it is supplied. The concept that the grid is interconnected is far less understood in this year's focus groups

than the ones conducted last year in the three largest cities of California. Respondents lacked the knowledge to link how electric power is created with the concept of global warming. The same was seen in the blogs about Flex Alerts. This is partially why the message created such a disconnect for most people to have both short-term blackouts and long-term global warming in the same message.

- Text message alerts have definite merit as a medium to communicate the alerts because text messaging is on the rise (particularly among the target audience of women) and the immediacy of text messages will allow the alerts to reach consumers at the precise time that conservation is needed.

- The 2007 evaluation revealed that members of the higher educated, environmentally aware group to which Flex Alert media buys are aimed frequently feel they are tapped out, i.e., there is a strong belief that they are already doing all they can to save energy. The focus groups were designed to explore other possible segments who may be receptive to energy conservation but who have not fully adopted energy-saving behaviors as part of their daily lives. The following table summarizes hypothesized segments that emerged in the 2008 focus groups; each group has core beliefs and attitudes that drive the most compelling message to prompt compliance with the behaviors requested by the Flex Alert messaging.

Table E-2. Summary of Hypothesized Segmentation Scheme

	The Choir	**Reluctant Converts**	**Financially Driven Converts**
Geographic Region	San Diego	Irvine	Fresno
Key Message	Do a little more of what you are already doing	Even business and governments are doing their part to prevent blackouts	Cost savings over time and at the state level
Motivations	Already appreciate the seriousness of the alerts	Need to overcome resentment, make the seriousness concrete by providing data	Most likely to comply "because you told us to"

E.3.4 Post-Event Survey

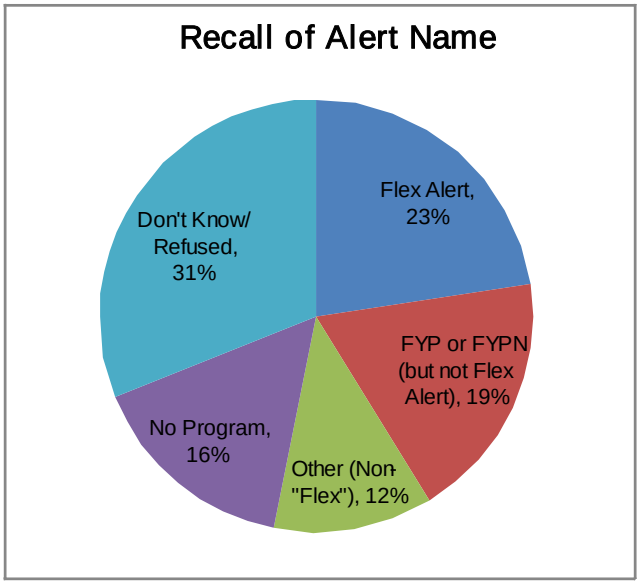
Summit Blue and Population Research Systems conducted a 1230-point post-event survey immediately following the July 8-10, 2008 Flex Alert. Full results of the survey are presented in Section 7. Key findings include:

- A large percentage (61%) of all respondents recalled seeing some type of energy conservation advertisement, alert, announcement, or other type of message in the past 10 days. Most often, these messages were seen on TV (43% of respondents who saw a message). Just 13% heard the energy conservation message on the radio, and another 10% read about it in the newspaper. About half of the TV messages recalled were advertisements and the other half were part of news broadcasts.

- About 23% of respondents associated the message they saw with the phrase "Flex Alert"; another 19% associated it with "Flex Your Power" or "Flex Your Power NOW!" Nearly half of respondents did not think that a program name was associated with the message that they

saw, and 12% recognized non-Flex alert names such as “Energy Alert” or “Conservation Alert.”

Figure E-3. Recall of Alert Name



- When the ads were described to them, 17% of respondents specifically recalled the Flex Alert TV ad and 11% recalled the Flex Alert radio ads. There were no statistically significant differences in Flex Alert recall between large and small DMAs. The aided recall of the Flex Alert TV ads is significantly higher than the 2007 post-event survey results.

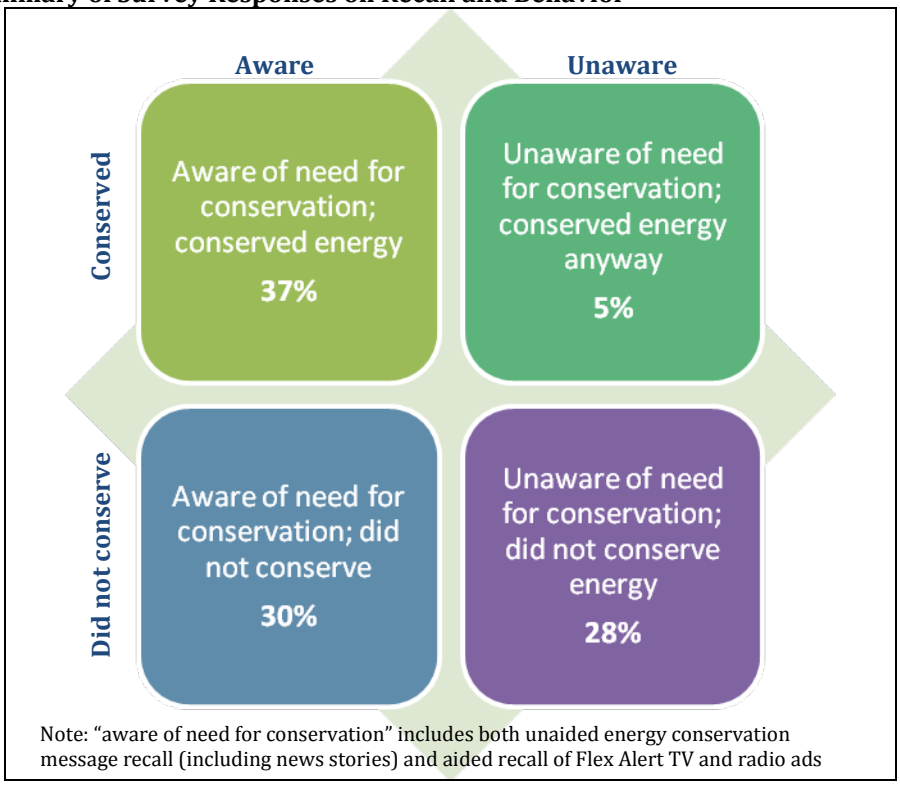
- Overall, 67% of respondents recalled some sort of energy conservation message or the Flex Alert (unaided and aided recall combined). Respondents had good recall of the requested conservation actions.

- Less than half of all respondents who recalled an energy conservation message understood that conservation is needed at particular times of day, and even fewer were able to correctly identify those times of day. Very few respondents understood that conservation was especially needed on particular days; the majority of respondents who reported taking conservation actions said that they did so on ten out of the previous ten days, when the Flex Alert period only lasted three days. Given that the Flex Alert messaging uses a global warming appeal, it is unsurprising that some respondents are interpreting the call for energy conservation as an ongoing, long-term need.

- Respondents who specifically recalled the paid Flex Alert advertisements (as opposed to other energy conservation messages or news media coverage of the event) had statistically significantly higher recall of the requested actions as well as the requested time period for which conservation is needed. Over one-quarter (28%) of respondents who recalled the Flex Alert advertisement reported waiting until 7 PM to use appliances, compared to 21% of those who only recalled another type of energy conservation message or just heard about the Flex Alert on the news. These findings suggest that the campaign’s paid advertisements are able to communicate the essential details about the Flex Alert more clearly than the news media coverage.

- Just over half (55%) of those respondents who recalled a message or alert (including both paid advertisements and news media coverage) reported taking conservation actions in response to the message. This translates to 37% of all respondents. Five percent of all respondents did not recall any energy conservation message but conserved energy anyway, and 28% did not recall any relevant messages and did not conserve energy (Figure 9-1). Respondents who saw an alert or message, but did not conserve (30% of all respondents) often reported that they did not conserve because they don't have air conditioning and therefore "there's nothing I can do," or that they are "already doing all we can do."

Figure E-4. Summary of Survey Responses on Recall and Behavior



Note: "aware of need for conservation" includes both unaided energy conservation message recall (including news stories) and aided recall of Flex Alert TV and radio ads

- The Flex Alert campaign reaches several different types of consumers, with distinct motivations and behaviors. Consistent with the program's marketing strategy, respondents who agreed with pro-environmental statements were more likely to report taking conservation actions than those who were neutral or disagreed with the pro-environmental statements. Less clear but in evidence is a distinction between those who act in their own self-interest (i.e., to save money on utility bills) and those who act more altruistically. Those who did not take Flex Alert-related actions are split between those who did nothing and those who believe they already are doing what they can. It may be possible to persuade a portion of the latter non-compliant segment that they can do "just a little more" by tapping into more aspects of community pride and cohesion where sacrifice is borne by all. Indeed, variations of "do a little more of what you already do" was a refrain in several focus groups this year.

E.3.5 Impact Analysis

The data from the post-event survey was used to estimate the demand response impact of the 2008 Flex Alert campaign. The survey was designed to include enough quantitative detail to perform a basic engineering analysis of air conditioner and lighting behaviors.

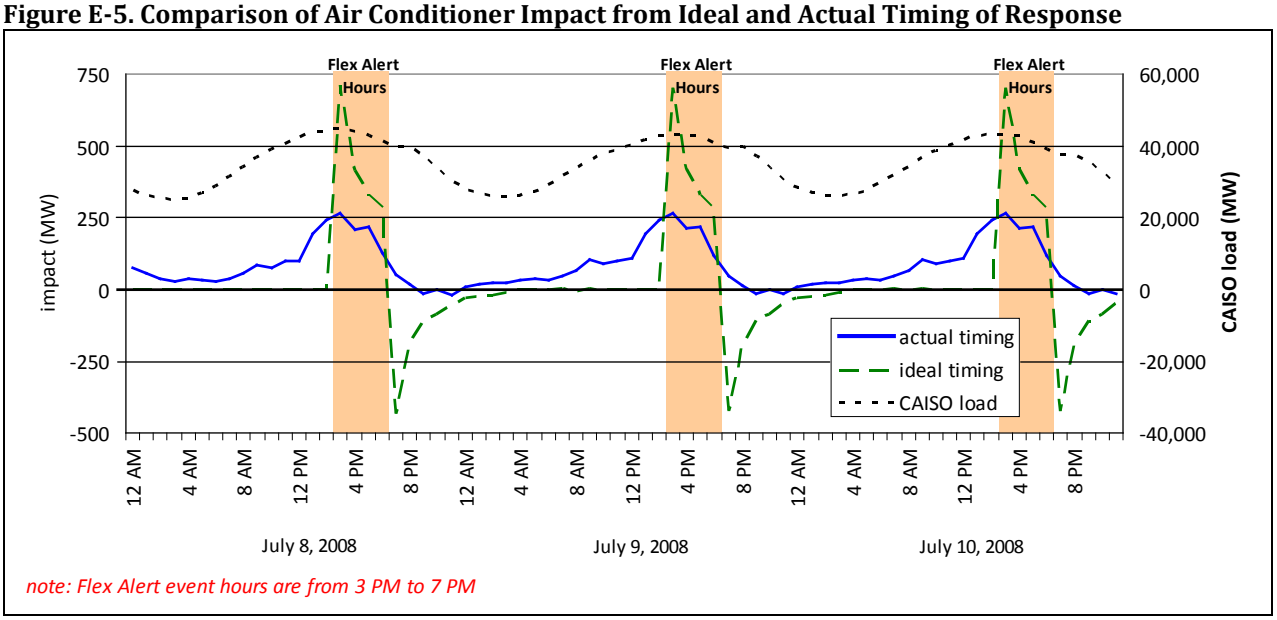
Full results from the impact analysis are presented in Section 8. Key findings include:

- The impact estimate for the 2008 Flex Alert campaign is approximately 222 to 282 MW based on self-reported air conditioner and lighting behaviors. The impact from lighting actions (40 to 55 MW) was approximately 1/6 of the total impact estimate.

- The 2008 survey contained significantly more detail than the 2007 survey on timing of actions, setpoints, and building characteristics. This information was used to revisit assumptions made in the 2006/2007 estimate and consequently revised it downward to 45 to 75 MW (from 93 to 495 MW, based on the post-event survey), due to lower than assumed per household impact. This suggests a significant increase in impact in 2008, due to higher portions of responses translating into quantifiable demand savings. Both the revised 2006/2007 estimate and the 2008 estimate suggest a sizable demand response impact from this non-resource program.

- Timing of conservation actions has a significant effect on the demand response impact. To examine the impact of respondents not all reducing air conditioner loads at the suggested times, the impact estimate model was rerun, assuming all respondents who reduced air conditioner loads did so precisely from 3 PM to 7 PM. This "ideal" behavior would nearly triple the impact during the first hour of the event; this difference in impact would decay over the course of the event, but the ideal scenario impact remains greater than the actual scenario during all event hours. The difference in impact is the opportunity cost of households either misunderstanding the targeted Flex Alert hours or being unable or unwilling to respond exclusively at the Flex Alert hours.

Figure E-5. Comparison of Air Conditioner Impact from Ideal and Actual Timing of Response



- Respondents in higher temperature climate zones (those with average high temperatures of over 90 degrees during the Flex Alert) were more likely to respond to the Flex Alert *and* had a larger average impact per respondent (0.144 kW) than respondents in lower temperature climate zones (0.070 kW). This difference can be explained by the greater potential for savings in hot climates because of higher air conditioner loads.

E.4 Recommendations

- If substantial modifications are made to the 2009 program design, a process evaluation should be run concurrently with the campaign to more efficiently document and assess the new implementation strategy.

- FYP, CAISO, and/or other entities such as the IOUs should issue a series of press releases over the course of a multi-day event to encourage continued media interest in the story, because the news media's coverage of the event decreased significantly over the alert period.

- In order to make the news stories more consistent, a precise media kit should be sent to each network affiliate in advance of the summer season, identifying clearly the source of the problem that's necessitating a Flex Alert, the three main conservation actions that should be taken, and the times conservation is required.

- The Flex Alert campaign should attempt to persuade television news stations to use the Flex Alert logo during relevant news stories, similar to how Bay Area TV news stations display the Spare the Air logo during the relevant portion of their broadcasts during Spare the Air events. Images of the logo should be included in the media kit.

- The quantitative review of TV news media coverage revealed that certain stations aired far more relevant news stories than others. The Flex Alert campaign should reach out to those stations (particularly FOX affiliates) which aired fewer relevant stories and convince them of the importance of covering the Flex Alert event. This could be accomplished by encouraging the media to run success stories of everyday people taking conservation actions. The focus group findings emphasize the need for accentuating the local community pride concept through highlighting neighborhood-level human interest stories.

- Engaging with authors of online and social media who discuss the Flex Alert would provide the campaign with an opportunity to participate in the conversation, correct misperceptions, and add suggestions for conservation activities. Blogs and message boards are ideal venues for providing information on the Flex Alert campaign that can spread virally. Additionally, the immediacy of microblogging (e.g., Twitter) provides an opportunity to share information about the alert quickly and this new form of social media should be explored for the campaign.

- The websites for the IOUs and CAISO should encourage visitors to continue on to the Flex Your Power website and/or provide energy conservation tips on their own website. The SDG&E and PG&E websites did have links to the Flex Your Power website, but did not specifically prompt visitors to click on the links for energy conservation tips. It is also important to highlight the specific hours during which conservation is most needed. These Flex Alert messages should be placed on the IOU websites the day before the alert if

possible, to provide time for families to plan their energy conservation actions in advance of the event.

- Corporate subscribers for emailed Flex Alert notifications did not receive tailored notifications for this event; and text message subscribers did not receive alerts. The Flex Alert campaign should consider making use of these cost-effective communications channels. Text messages are instantaneous, so the message could hit at the appropriate time to maximize the likelihood of load reduction at the critical time.

- Focus group and survey respondents continue to struggle with the concept of conservation being especially needed on specific days (i.e., Flex Alert days), not just during specific times of day; and many do not correctly identify the times of day either. The Flex Alert campaign and associated entities (CAISO, the IOUs) should endeavor to further emphasize that conservation is needed *today* and *during specific hours*, in both the advertisements and in statements to the news media.

- The Flex Alert campaign partners (e.g., media and IOUs) should be encouraged to avoid focusing too heavily on air conditioner turn-down behaviors, because some survey respondents who were aware of the Flex Alert reported that they did not do anything because they don't have air conditioning. This was also seen in the review of blogs about the Flex Alerts. Furthermore, being able to benchmark one's action relative to other actions that he/she could take (i.e., running a load of laundry vs. microwaving dinner) allows people to assess tradeoffs and make choices regarding their energy using behavior.

- On a similar note, it's important that Californians living in cooler climates understand that even if they aren't suffering from a heat wave, if other regions in the state are, the entire power grid is threatened. Additional education on this topic may be warranted.

- Ways of incorporating a mix of personally relatable consequences and proactive positive behaviors should be considered for future advertising messages.

- In order to increase compliance with the Flex Alert among a broader subset of the population, it may be worth exploring targeting groups that are not already conserving or environmentally motivated. Many respondents reported feeling that they are already doing all that they can to conserve energy. A true segmentation strategy with different appeals and possibly media buys for each identified segment of interest could be explored. There are two distinct attitudinal segments of non-responders: those who already conserve but do no more on Flex Alert days than on other days and those who just don't conserve. Distinct messaging is needed to appeal to these different segments.

- Although we understand the hesitation to introduce cost savings into the messaging due to concerns about snapback, many survey respondents and focus group participants indicated that reducing energy costs is a major concern, especially in light of the current U.S. financial outlook. Framing a portion of the Flex Alert appeals in those terms may help capture the attention of additional segments.

1. INTRODUCTION

1.1 Program Background

The Flex Alert: Save Energy Now! campaign focuses on achieving voluntary peak demand reductions on days when the California Independent System Operator (CAISO) determines that electricity supply may not be sufficient to meet demand. The campaign uses a mass media implementation strategy to ask Californians to reduce peak electricity use on critical days. The Flex Alert campaign is co-branded with the broader Flex Your Power (FYP) campaign, which mostly promotes the purchase of energy-efficient appliances and products. Both campaigns are administered by McGuire and Company (formerly Efficiency Partnership). Whereas the Flex Your Power and Flex Alert campaigns have different goals, the two campaigns' messages were developed in conjunction with each other and are promoted to the same target audience through similar mass media communications channels. The FYP and Flex Alert campaigns operate across the state of California, spanning the territory of the major investor-owned utilities. Program funding, authorization, and evaluation are covered by the jurisdiction of the California Public Utilities Commission (CPUC). Oversight for this evaluation of the Flex Alert campaign's program year 2008 is provided by the Demand Response Measurement and Evaluation Committee (DRMEC), a statewide committee with representatives from San Diego Gas & Electric (SDG&E), Southern California Edison (SCE), Pacific Gas & Electric (PG&E), the California Energy Commission (CEC), and the CPUC.

The Flex Alert campaign is designed to build awareness of energy saving/shifting actions that one can take during hot summer afternoons and particularly when a Flex Alert is called. The three major conservation actions promoted are turning off unnecessary lights, setting the thermostat to 78 degrees or higher, and delaying the use of energy-consuming appliances such as dishwashers until after 7 PM. A Flex Alert is issued when CAISO officials decide that demand for electricity could outstrip supply on a particular day, possibly leading to brown-outs. Flex Alerts are typically issued the day before or the day of the possible system emergency, via radio and TV commercials, email "blasts," electronic message boards (e.g., those that display public messages such as Amber Alerts), and increasingly through the news media. The Flex Alerts typically ask Californians voluntarily to reduce their electricity consumption during the peak hours (2-7 PM) by taking any of the recommended actions listed above.

The terminology used to identify the program itself and the events have gone through several iterations across the lifetime of the program. In this report, the program is referred to as the Flex Alert campaign and an event is referred to as a Flex Alert.

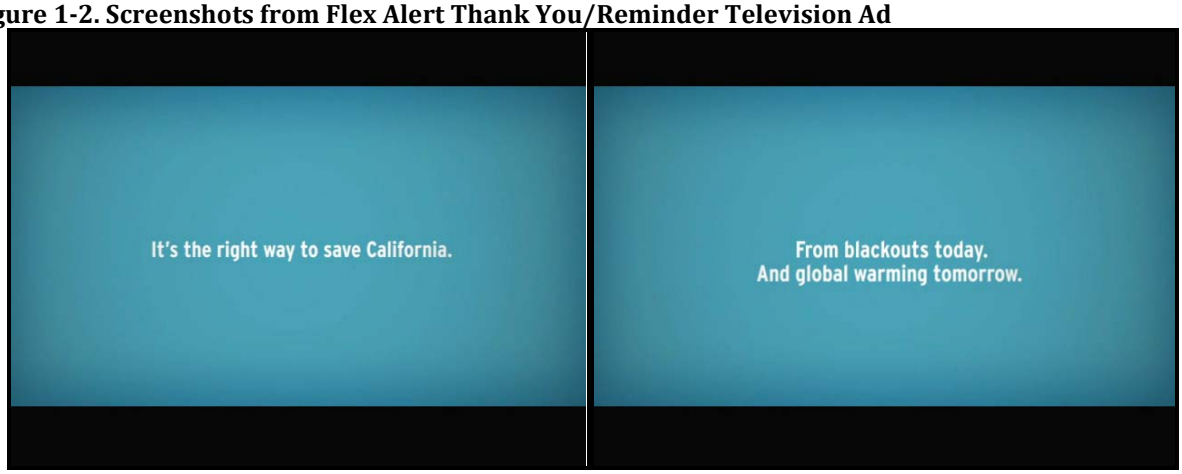
1.2 Flex Alert Logos and Advertisements

The Flex Alert campaign used three television ads in 2007 and 2008: a brief alert, an extended alert, and a thank-you/reminder message. All three ads featured a series of words and/or icons over a solid-colored background, with a voiceover performed by a solemn announcer. The two alert messages (aired on the day of the Flex Alert) have a red background; the thank-you/reminder message (aired after the Flex Alert has ended) had a blue background.

Figure 1-1. Screenshots from Flex Alert Television Ad

The text of the blue thank-you/reminder ads reads, "During hot weather, we all know how important it is to conserve energy. That's why Californians should take pride for saving so much electricity during power shortages. Of course, officials could still call a Flex Alert. If they do, start saving energy immediately. It's the right way to save California from blackouts today and global warming tomorrow."

Figure 1-2. Screenshots from Flex Alert Thank You/Reminder Television Ad



In addition to television advertising, the Flex Alert campaign utilizes radio and outdoor advertising. Figure 1-3 shows photographs taken of an outdoor advertisement found at a BART train station in the Bay Area and a billboard advertisement also located in the Bay Area. These outdoor advertisements are static (i.e., they are present throughout the summer campaign, not just during Flex Alerts themselves) and serve to familiarize Californians with the Flex Alert concept. The text reads "In case of Flex Alert, save energy now."

Figure 1-3. Outdoor Advertising Used in the Bay Area

2. METHODOLOGY

2.1 Media Monitoring Methodology

Summit Blue enlisted Nationwide News Monitors to gather videos and transcripts of news broadcasts related to the July 2008 Flex Alert event. This service gathered hundreds of stories from 48 different media outlets across the state of California. The service collected these stories based on a list of keywords that Summit Blue provided:

- **"Flex Your Power Now"**
- **"FYPN"**
- **"power alert"**
- **"power Flex Alert"**
- **"Flex Alert"**
- **"Flex Your Power Day"**
- **"state power grid" AND "capacity"**
- **"stage 1 alert"**
- **"stage 1 emergency"**
- **"stage 1 power emergency"**
- **"stage 2 emergency"**
- **"minor power emergency"**
- **"stage 2 alert"**
- **"stage 2 power emergency"**
- **"energy supply" AND "low"**
- **"turn off unnecessary lights"**
- **"major appliances until 7 PM"**
- **"thermostat to 78 degrees"**
- **"shut blinds" AND "power"**
- **"blackout"**
- **"brownout"**
- **"use shades" AND "power"**
- **"demand response"**
- **"conservation alert"**
- **"summer discount plan"**
- **"summer savers"**
- **"peak time rebate"**
- **"Smart AC"**

The major media markets in California were covered: San Francisco-Oakland-San Jose, CA, Los Angeles, CA, Palm Springs, CA, Sacramento-Stockton-Modesto, CA, San Diego, CA, Fresno-Visalia, CA, Bakersfield, CA, Monterey-Salinas, CA, Santa Barbara-Santa Maria-San Luis Obispo, CA, Chico-Redding, CA. The major networks were covered: ABC, NBC, CBS, FOX, WB, and various independent TV stations, like KRON-4 in San Francisco.

In addition to this media monitoring service, Summit Blue staff closely reviewed California news websites and other websites related to the Flex Alerts continually over the week of the July 2008 Flex Alert. Websites reviewed included the Flex Your Power, CAISO, SDG&E, SCE, and PG&E websites.

Section 3 of this report presents Summit Blue's review of the communications from the Flex Alert campaign and Section 4 presents the review of media coverage of the Flex Alert event.

2.2 Survey Methodology

Summit Blue enlisted Population Research Systems (PRS) to conduct a post-event survey with a target of 1200 completes. Table 2-1 presents the survey sample targets by designated media area (DMA), which have been modified from those used in the 2007 evaluation's survey efforts. The sample design was structured to maximize the precision of the impact estimates at the 90%

confidence level by increasing quota sizes for DMAs that contribute more to the uncertainty surrounding the statewide impact estimate (i.e., more populous DMAs and those with high numbers of central AC units) and decreasing quota sizes for DMAs which contribute less to the estimate's uncertainty. Two DMAs (Yuma and Eureka) that each account for less than 1% of the state's population were eliminated from the sample. The minimum quota for the smallest DMA is 30 completes; beyond that, the quotas were set proportionally to each DMA's share of the total central AC units in the state based on the target of 1200 completed surveys. The Los Angeles DMA accounts for 48% of the California population and 40% of the state's central AC units, and thus has the highest quota. While the smaller quota sizes for the smallest DMAs do reduce the statistical significance of these individual DMAs' results, the new sampling plan significantly improves the precision of the statewide impact estimate in comparison to the sampling plan used in the 2007 evaluation.

Table 2-1. Sample Size Targets by Designated Media Area (DMA)

DMAs	Quota	% of 2008 Targets	DMA Population (Ages 18+)	% of Total California Population	% of CAC Units
Los Angeles	460	38.3%	12,031,706	48%	40%
Sacramento	140	11.7%	2,573,766	10%	13%
San Francisco	140	11.7%	5,157,486	21%	12%
San Diego	140	11.7%	2,067,282	8%	9%
Fresno	100	8.3%	1,133,967	5%	9%
Palm Springs	90	7.5%	358,863	1%	8%
Bakersfield	40	3.3%	246,306	1%	4%
Chico	30	2.5%	364,978	1%	2%
Monterey	30	2.5%	506,964	2%	1%
Santa Barbara	30	2.5%	473,894	2%	1%
Yuma	0	0%	97,650	0%	1%
Eureka	0	0%	117,153	0%	0%
Total	**1,200**	**100%**	**25,130,015**	**100%**	**100%**

A map of the California DMAs can be found in Appendix C.

Section 5 presents the results of the post-event survey.

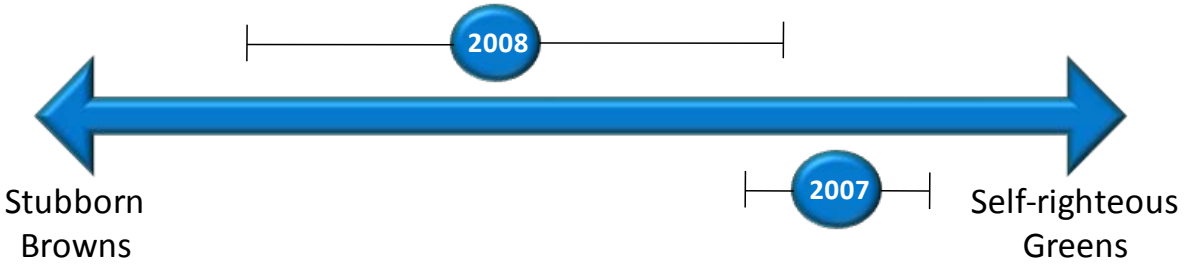
2.3 Focus Groups Methodology

Summit Blue Consulting, LLC once again retained Braig Consulting for their expert consumer psychology and marketing qualifications to conduct focus groups in California on August 19-21, 2008.

Summit Blue and Braig Consulting revised the focus groups' research design from summer 2007 to include some smaller DMAs, broadening the focus beyond just major cities. Further, in order to assess potential opportunities to reach additional consumer types or segments, the screening

criteria were expanded to include those who were less environmentally aware and receptive (see Figure 2-1 to compare the attitudinal composition of the 2007 focus groups and the 2008 focus groups). Finally, the decision was made to do one focus group in each selected city with homeowners and one with renters. This decision was based on research from the previous year that suggested that renters did respond well to the alerts in terms of voluntary load reductions.[1]

Figure 2-1. Comparison of 2007 Focus Group Composition to 2008 Focus Groups



Two 2-hour focus groups were conducted in each of three cities – Fresno, Irvine, and San Diego. A research facility located appropriate respondents from their database with the goal of having six people in each group. One group had only five respondents, but the goal of six was achieved in all other groups.

The specifications for each group included: college educated, slight skew toward females based on prior research suggesting greater FYP participation rates for women, positive skew but still a mix on environmental attitude and behavior questions, and have central air conditioning or at least one window unit. We recruited a mix of ages from 35-49. Homeowners were required to have a minimum household income of $75,000 and renters a maximum household income of $125,000. Finally, Fresno respondents all had PG&E as their utility, Irvine respondents were all SCE customers, and SDG&E served all San Diego respondents. No respondent worked for or had a close family member who worked for a utility or energy-related company. Hence, if respondents had knowledge of energy programs, power plants, energy-efficient appliances, etc., it was likely due to their own information gathering and personal experience rather than a professional interest.

A copy of the focus group discussion guide is provided in Appendix H.

2.4 Indirect Impact Analysis Methodology

Note that the indirect impact analysis methodology is presented in Section 8 along with the results of the impact analysis.

[1] *2006-2007 Flex Your Power Now! Evaluation Report.* Summit Blue Consulting. May 22, 2008.

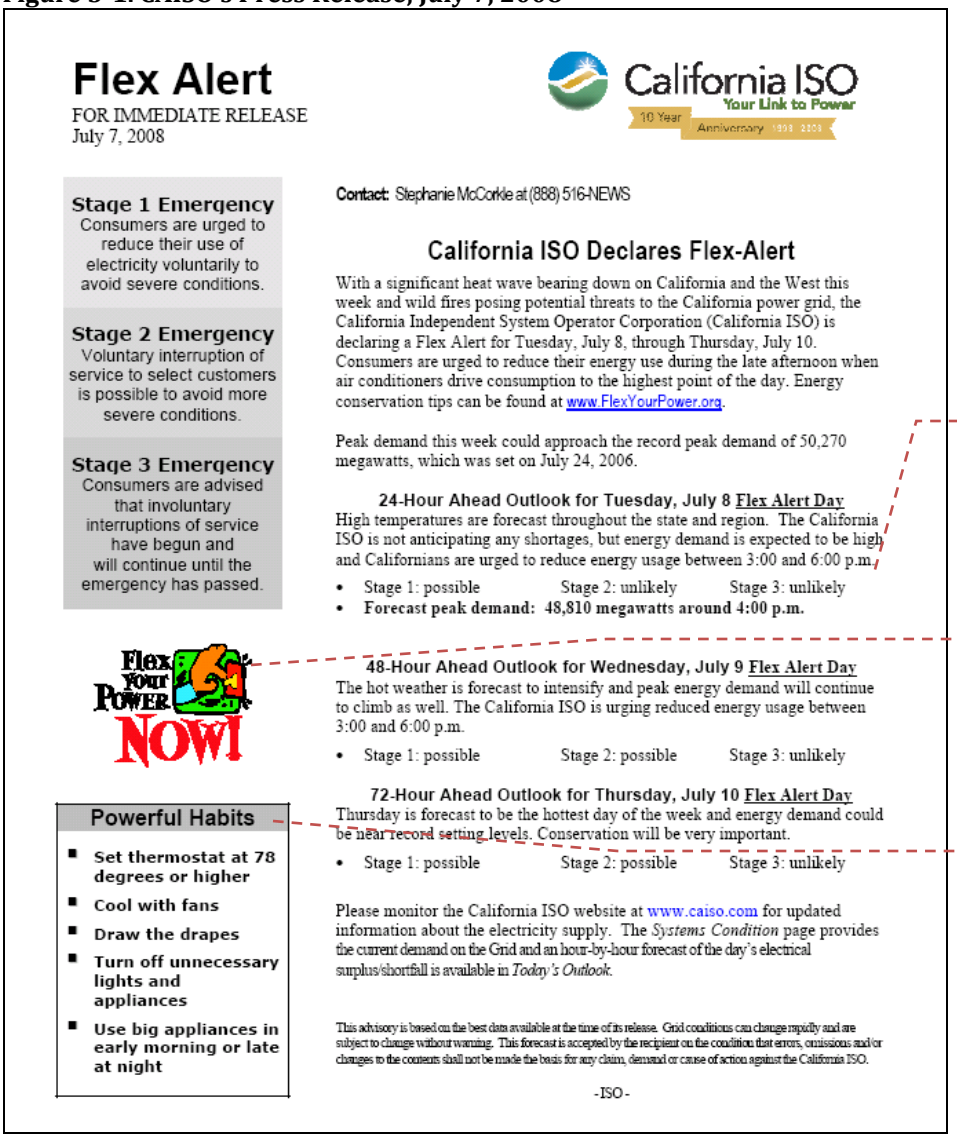
3. REVIEW OF COMMUNICATIONS FROM THE FLEX ALERT CAMPAIGN, CAISO, AND THE INVESTOR-OWNED UTILITIES

3.1 CAISO's Press Release

The California Independent System Operator (CAISO) issued a press release on Monday, July 7, 2008, announcing that a Flex Alert had been called for the following Tuesday through Thursday, July 8-10, 2008. Figure 3-1 displays the press release, which was titled "California ISO Declares Flex-Alert."[2] The press release cited the heat wave and the wildfires posing a threat to the state power grid as the major reasons for the Flex Alert. The press release states that CAISO "is not anticipating any shortages, but energy demand is expected to be high and Californians are urged to reduce energy usage between 3:00 and 6:00 p.m." The press release featured the old Flex Your Power NOW! logo, rather than the Flex Alert: Save Energy Now! logo which was introduced in summer 2007 in replacement of the FYPN logo.

[2] The PDF version of the press release is available at http://www.caiso.com/1ffd/1ffdaed355180ex.html.

Figure 3-1. CAISO's Press Release, July 7, 2008



Flex Alert

FOR IMMEDIATE RELEASE
July 7, 2008

California ISO
Your Link to Power
10 Year Anniversary

Stage 1 Emergency
Consumers are urged to reduce their use of electricity voluntarily to avoid severe conditions.

Stage 2 Emergency
Voluntary interruption of service to select customers is possible to avoid more severe conditions.

Stage 3 Emergency
Consumers are advised that involuntary interruptions of service have begun and will continue until the emergency has passed.

Contact: Stephanie McCorkle at (888) 516-NEWS

California ISO Declares Flex-Alert

With a significant heat wave bearing down on California and the West this week and wild fires posing potential threats to the California power grid, the California Independent System Operator Corporation (California ISO) is declaring a Flex Alert for Tuesday, July 8, through Thursday, July 10. Consumers are urged to reduce their energy use during the late afternoon when air conditioners drive consumption to the highest point of the day. Energy conservation tips can be found at www.FlexYourPower.org.

Peak demand this week could approach the record peak demand of 50,270 megawatts, which was set on July 24, 2006.

24-Hour Ahead Outlook for Tuesday, July 8 Flex Alert Day
High temperatures are forecast throughout the state and region. The California ISO is not anticipating any shortages, but energy demand is expected to be high and Californians are urged to reduce energy usage between 3:00 and 6:00 p.m.

- Stage 1: possible Stage 2: unlikely Stage 3: unlikely
- **Forecast peak demand: 48,810 megawatts around 4:00 p.m.**

Flex Your Power NOW!

48-Hour Ahead Outlook for Wednesday, July 9 Flex Alert Day
The hot weather is forecast to intensify and peak energy demand will continue to climb as well. The California ISO is urging reduced energy usage between 3:00 and 6:00 p.m.

- Stage 1: possible Stage 2: possible Stage 3: unlikely

72-Hour Ahead Outlook for Thursday, July 10 Flex Alert Day
Thursday is forecast to be the hottest day of the week and energy demand could be near record setting levels. Conservation will be very important.

- Stage 1: possible Stage 2: possible Stage 3: unlikely

Powerful Habits

- **Set thermostat at 78 degrees or higher**
- **Cool with fans**
- **Draw the drapes**
- **Turn off unnecessary lights and appliances**
- **Use big appliances in early morning or late at night**

Please monitor the California ISO website at www.caiso.com for updated information about the electricity supply. The *Systems Condition* page provides the current demand on the Grid and an hour-by-hour forecast of the day's electrical surplus/shortfall is available in *Today's Outlook*.

This advisory is based on the best data available at the time of its release. Grid conditions can change rapidly and are subject to change without warning. This forecast is accepted by the recipient on the condition that errors, omissions and/or changes to the contents shall not be made the basis for any claim, demand or cause of action against the California ISO.

-ISO-

Conservation is requested between 3 and 6 PM, not the typical 2-7 PM time period

The old Flex Your Power NOW! logo is used, rather than the new Flex Alert: Save Energy Now!

This text box lists the requested conservation actions; includes more than the three simple standard Flex Alert actions

The July 7, 2008 press release was the only press release that CAISO issued during this Flex Alert event.

3.2 CAISO Website

3.2.1 CAISO Website Content During 2008 Flex Alert

As it does every day, the CAISO website featured information on forecast and actual demand and displayed a "Conserve-o-Meter" which was pointed to "Needed" for most of the Flex Alert period. Summit Blue took a series of screenshots of the CAISO website over the three-day Flex Alert period to highlight how actual demand differed from forecast demand. As noted in some of the news stories discussed in Section 4, lower than forecasted temperatures likely contributed to the discrepancy between forecast and actual demand, along with conservation playing some role in that.

Figure 3-2 and Figure 3-3 display screenshots taken on Tuesday at 9:15 AM and 4:00 PM, respectively. There is no indication on the CAISO homepage that a Flex Alert is in effect, nor is there a link to the FYPower.org website.

Figure 3-2. CAISO Website Homepage, Tuesday, July 8, 2008, at 9:15 AM

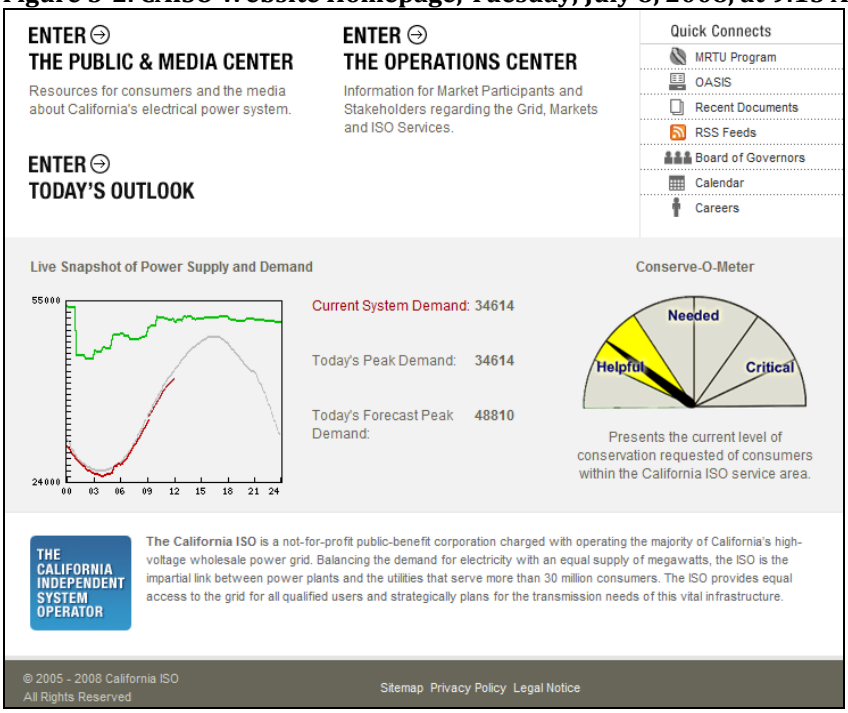


Figure 3-3. CAISO Website Homepage, Tuesday, July 8, 2008, at 4:00 PM

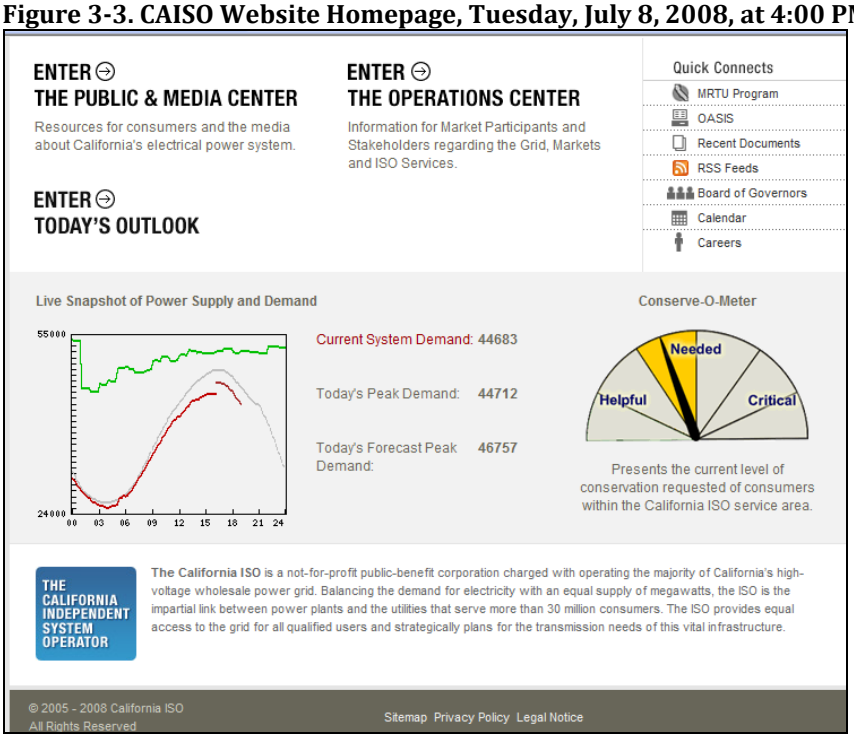
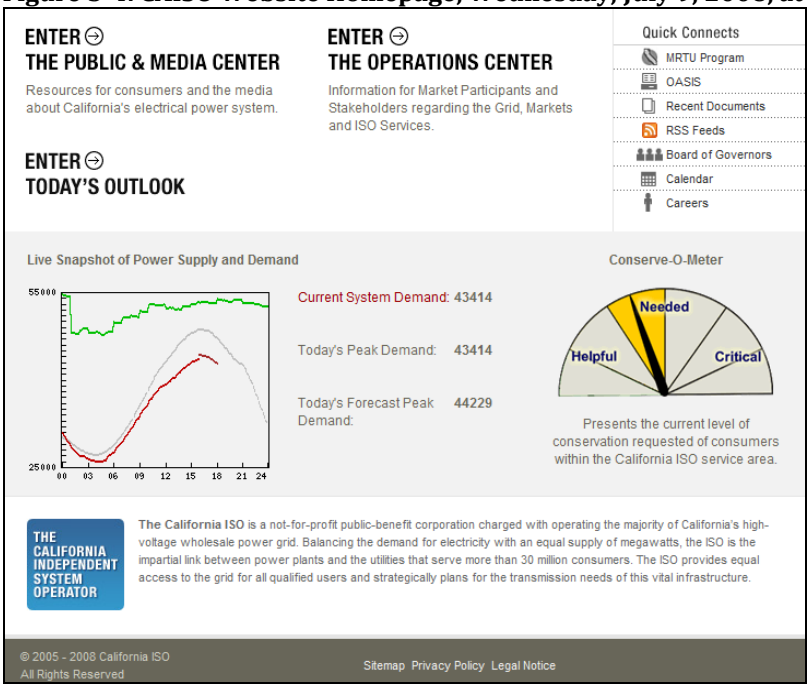


Figure 3-4 and Figure 3-5 display screenshots from Wednesday at 4:00 PM and 9:00 PM, respectively.

Figure 3-4. CAISO Website Homepage, Wednesday, July 9, 2008, at 4:00 PM



In Figure 3-5, note the slight rise in demand after 7 PM, which may indicate that Californians who were conserving during the peak hours were starting to turn their lights, appliances, and air conditioners back on. However, this may also be due to normal patterns of consumption, as many people are getting home from work, cooking dinner, running the dishwasher, etc.

Figure 3-5. CAISO Website System Outlook Page, Wednesday, July 9, 2008, at 9:00 PM

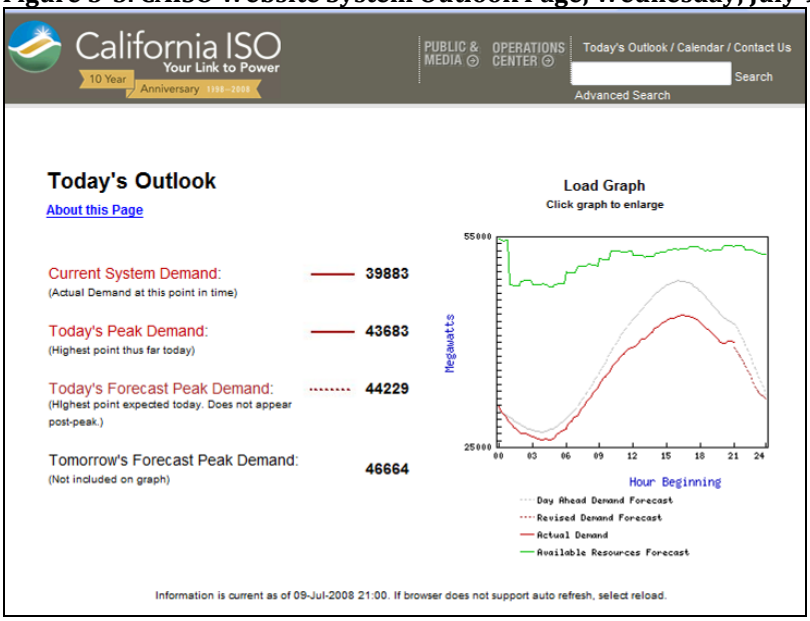
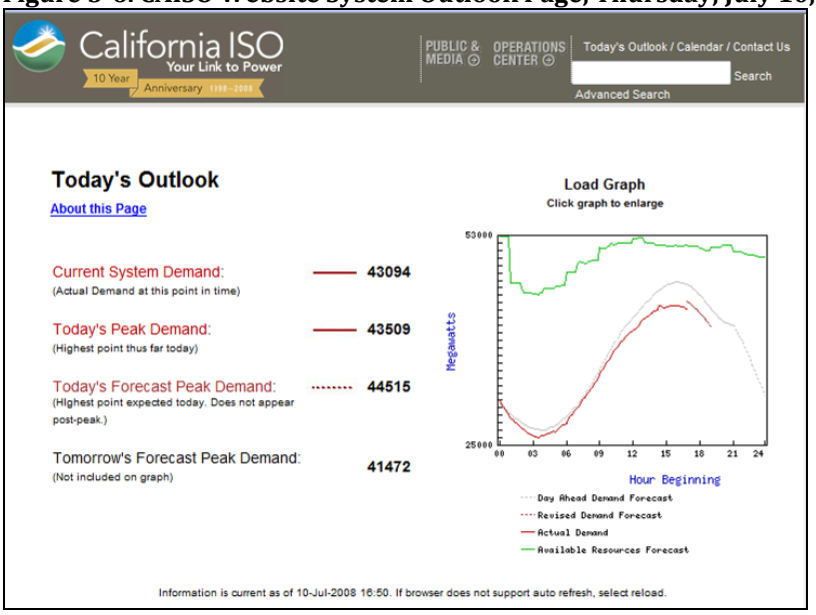


Figure 3-6 displays a screenshot from Thursday at 5:00 PM. As in previous days, the actual demand came in significantly lower than the forecasted demand, likely due to the lower-than-forecasted temperatures in many parts of the state.

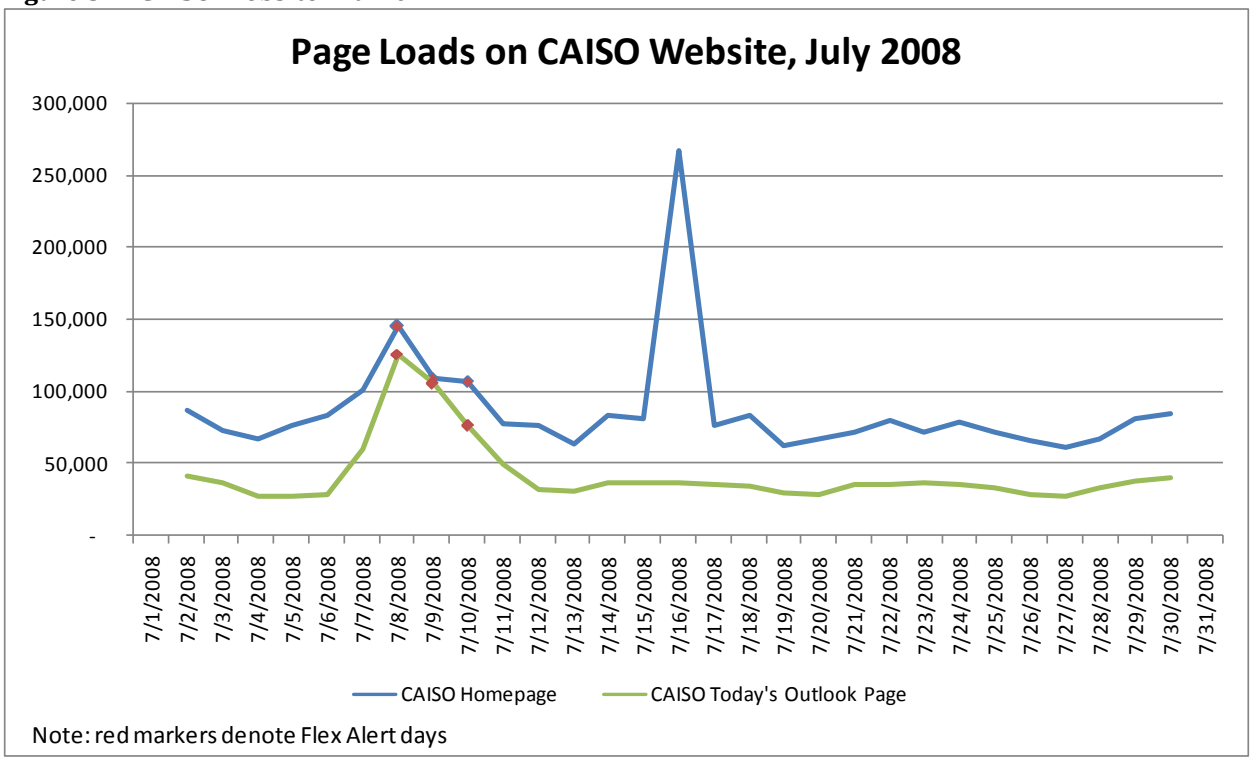
Figure 3-6. CAISO Website System Outlook Page, Thursday, July 10, 2008, at 5:00 PM



3.2.2 CAISO Website Traffic During 2008 Flex Alert

Figure 3-7 displays the number of page loads on the CAISO website and specifically on the Today's Outlook webpage during the month of July 2008. The median number of page loads over the month of July for the website as a whole was 77,040; for the Today's Outlook page, it was 35,609. During the Flex Alert (July 8-10, 2008), the number of page loads spiked significantly to close to 150,000 page loads (for the overall website) and over 125,000 on the Today's Outlook page on the first day of the Flex Alert. Over the course of the Flex Alert, as it became clear that the temperatures were not as high as predicted and the media coverage of the Flex Alert dropped off, the number of page loads on the CAISO website also dropped, although it remained higher than the typical levels. Note that the spike in traffic on July 16th was not related to any major event affecting the grid, but rather may have been caused by a search engine indexing the site or some other automated data collection effort.

Figure 3-7. CAISO Website Traffic

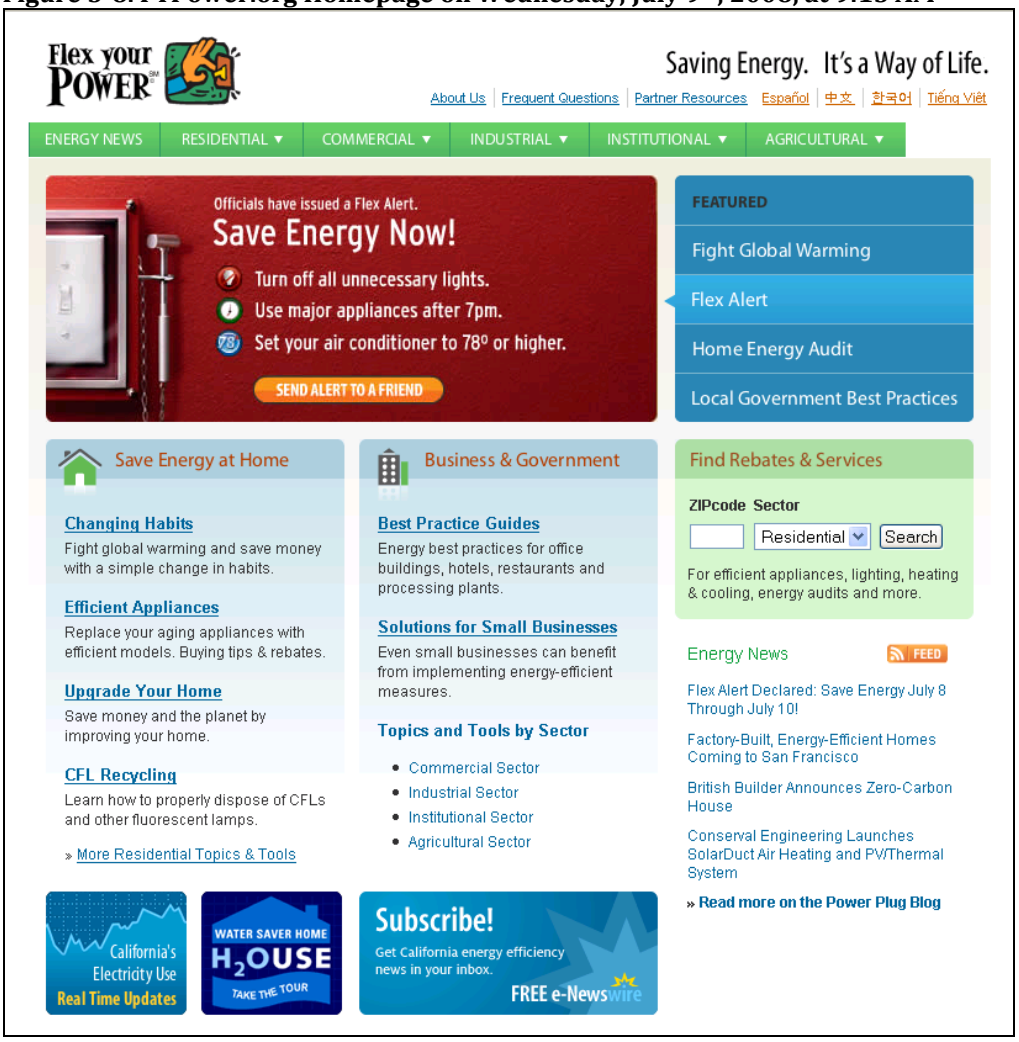


3.3 FYPower.org Website

3.3.1 FYPower.org Website Content During 2008 Flex Alert

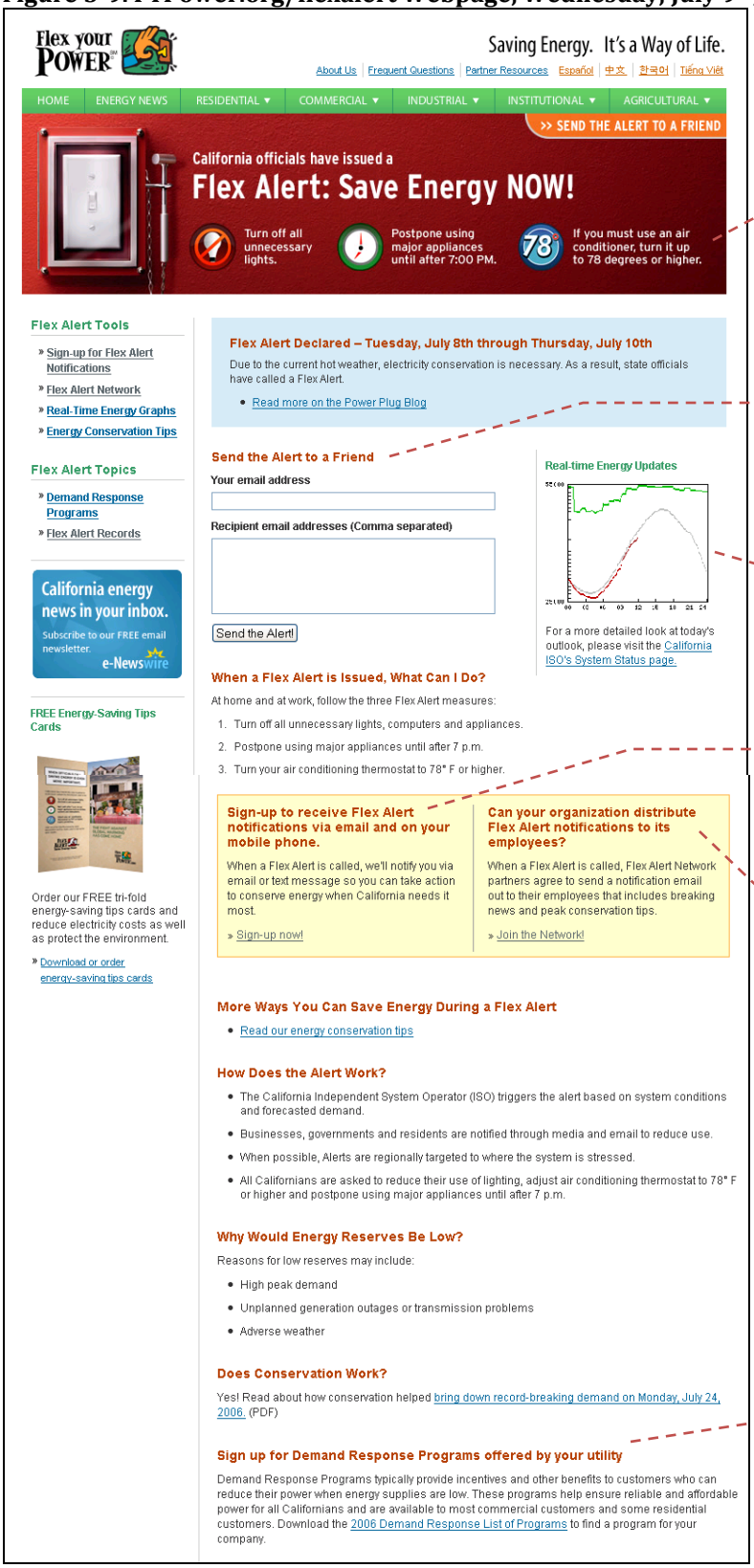
Figure 3-8 is a screenshot of the Flex Your Power homepage (.fypower.org) taken on Wednesday, July 9th, 2008. A prominent, attention-grabbing Flex Alert graphic appears on the homepage instructing visitors to "Save Energy Now!" and listing the three major requested actions. The graphic also includes a link to "Send the alert to a friend."

Figure 3-8. FYPower.org Homepage on Wednesday, July 9th, 2008, at 9:15 AM



Within the FYPower.org website, the Flex Alert webpage included some helpful features (Figure 3-9).

Figure 3-9. FYPower.org/flexalert Webpage, Wednesday, July 9th, 2008, at 9:15 AM



The three major requested actions are prominently displayed

A form to send the alert to friends and family

CAISO's demand graph and a link to the CAISO website

Sign-up for email and text message notifications of Flex Alerts

Sign-up for organizations joining the Flex Alert Network

Sign-up for utility demand response programs

Figure 3-10 displays a story about the Flex Alert that appeared on Flex Your Power's Power Plug Blog. This story also appeared in the e-Newswire email newsletter distributed on Wednesday, July 9th. The article explained the need for conservation and included a large yellow graphic which prominently displayed the three requested actions. The icons used in this graphic are consistent with those in the Flex Alert TV and online advertisements.

Figure 3-10. Flex Your Power's Power Plug Blog, Wednesday, July 9th, 2008, at 9:15 AM

3.3.2 FYPower.org Website Traffic During Summer 2008

Figure 3-11 presents the number of unique visitors to the Flex Your Power website during summer 2008, as well as the Flex Alert and Flex Alert Email Signups pages within the FYP website. Over the course of the summer, the FYPower.org website receives a median of 608 visitors per day, and the Flex Alert page receives 49. However, during the three-day Flex Alert (July 8-10, 2008), the traffic to the Flex Alert page spiked to 37,051 visitors on July 9th. Traffic to the FYPower.org homepage showed a much more modest increase. The PG&E website provided a link directly to the Flex Alert

page, as did some news media outlets, which may account for the more dramatic increase in the Flex Alert visits. It appears that overall, the FYPower.org website receives considerably less traffic than the CAISO website; a link from the CAISO website to the FYP website could help drive up traffic to the site during Flex Alert events.

Figure 3-11. FYPower.org Website Traffic

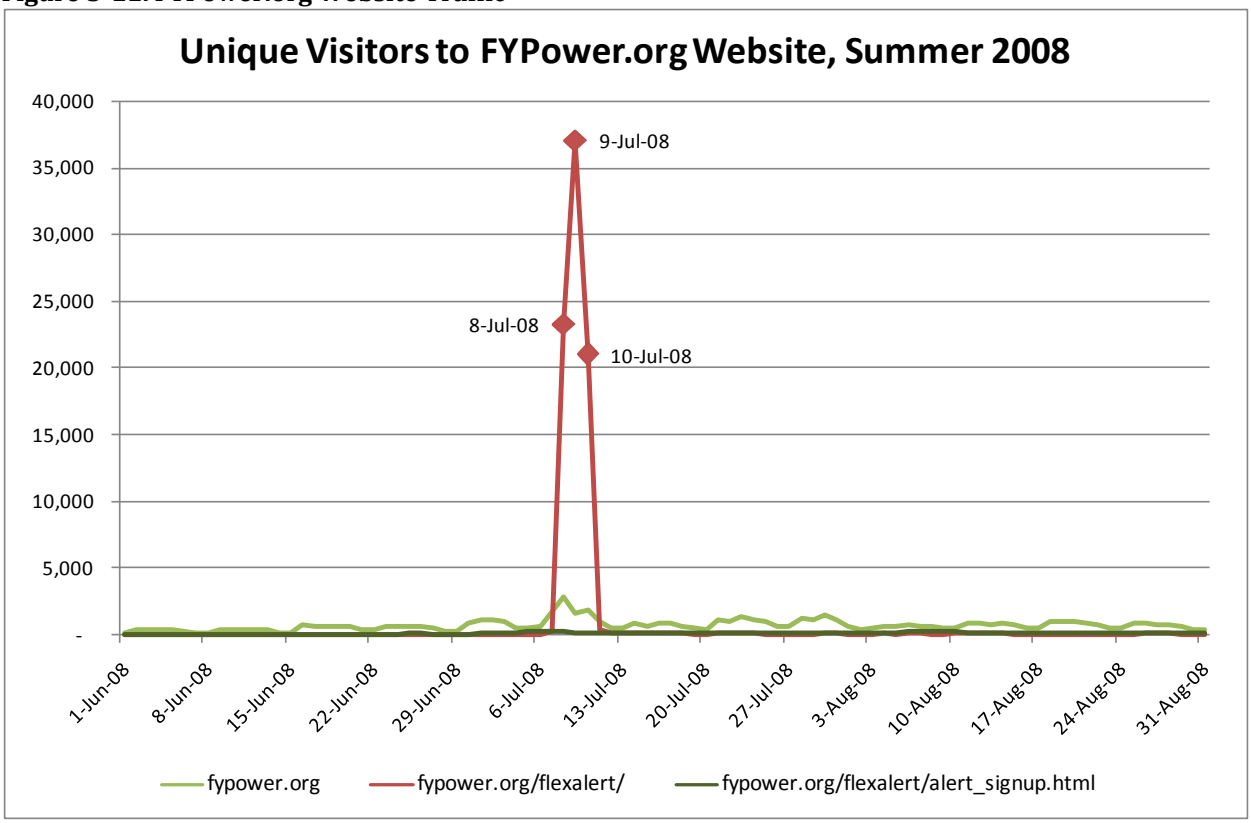
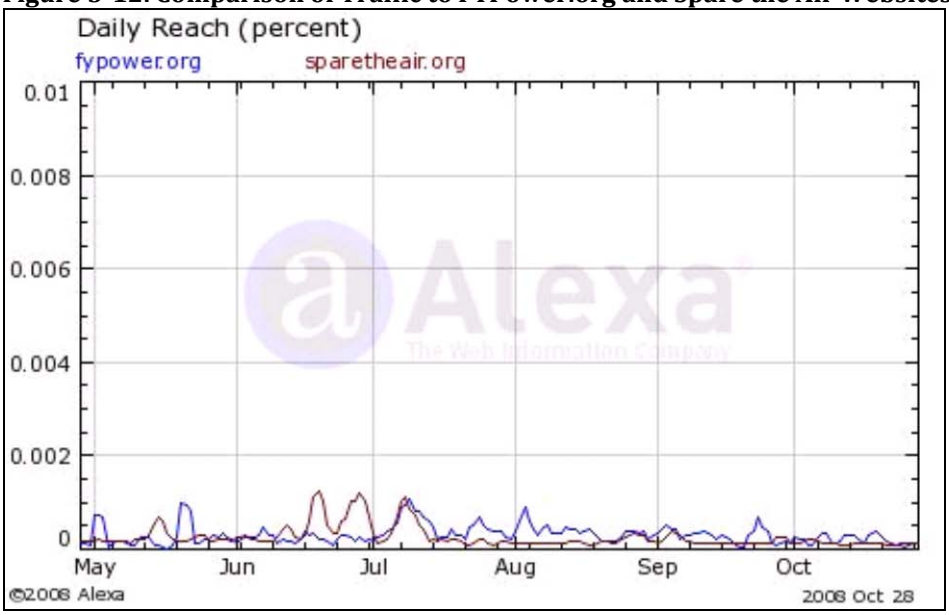


Figure 3-12 compares the traffic to the Flex Your Power website and the Spare the Air[3] website; note that the two websites receive similar levels of traffic on alert days despite the fact that the Flex Your Power/Flex Alert campaigns are statewide and the Spare the Air campaign is limited to the Bay Area. The metric measured in the graph is the daily reach as a percentage of all internet users visiting the site, but the real focus of this graphic is the magnitude of the reach of the two websites in relation to one other.

[3] Spare the Air is a campaign in the San Francisco Bay Area that has many similarities with the Flex Alert campaign; its mission is to educate the public about summer air pollution and promote individual behavior changes that improve air quality, particularly on specific alert days (Spare the Air Days).

Figure 3-12. Comparison of Traffic to FYPower.org and Spare the Air Websites



3.4 Email Alerts from Flex Alert Campaign

3.4.1 Flex Alert Emails Sent During July 2008 Event

Summit Blue staff signed up to receive emailed Flex Alert notifications prior to the July 2008 event. Figure 3-13 presents the email received by email subscribers on Monday evening, before the alert started on Tuesday, July 8, 2008. The email explained that the need for conservation is due to the current hot weather and clearly listed the three major requested conservation actions. It directed the reader to the fypower.org website for more information and requested that the reader forward the message along to friends and colleagues.

Figure 3-13. Email Alert Received by Flex Alert Email Subscriber

From: Flex Your Power [flexalert@fypower.org]
Subject: Flex Alert Declared: Save Energy Tuesday – Thursday
Sent: Mon 7/7/2008 7:20 PM

The California Independent System Operator (CAISO), charged with managing the electricity grid in California, has issued a Flex Alert for Tuesday, July 8th through Thursday, July 10th.

Due to the current hot weather, electricity conservation is necessary. As a result, state officials have called a Flex Alert.

It's important that you:

- Turn off all unnecessary lights

- Postpone using major appliances until after 7:00 PM

- If you must use an air conditioner, turn it up to 78 degrees or higher

For updates, please visit .FlexYourPower.org. We ask that you pass this e-mail along to your friends and colleagues.

And thanks for Flexing Your Power.

This email was sent to @summitblue.com.

You can instantly unsubscribe from these emails by clicking the link below:

://flexalerts.cmail5.com/u/456333/wu1dmj/

The FYPower.org website includes a mechanism for sending the alert to friends and family. Summit Blue staff used this mechanism to see how the "friends and family" email might differ from the email that goes to subscribers. The friends and family email (shown in Figure 3-14) actually includes more details than the subscriber email, including an explanation that the Northern California wildfires posed a threat to the state's power grid, in addition to the high demand caused by high temperatures. However, it does not suggest specific conservation actions, but rather directs readers to the FYPower.org website for more details.

Figure 3-14. Email Sent Through "Send the Alert to a Friend" Mechanism on .fypower.org/flexalert Website

This Flex Your Power news story was sent to you by: @summitblue.com
---
Message from sender:

Flex Alert Declared: Save Energy July 8 Through July 10!

With a significant heat wave bearing down on California and the West this week, and with more than 300 wildfires still burning statewide posing potential threats to the state's power grid, the California Independent System Operator (CAISO) has declared a Flex Alert for Tuesday through Thursday, July 8 - 10. CAISO expects to see the highest electricity demand of the summer this week, and it urges Californians to conserve energy, especially during the "AC rush hour" of 3:00 - 6:00 p.m.

CAISO says it does not anticipate any shortages this week, but it cautions that peak demand could approach the record peak demand of 50,270 MW, set July 24, 2006 (e-Newswire, 7/26/06).

To sign up to receive e-mail and text message notification of Flex Alerts, and for energy conservations tips, visit our Flex Alert page...

Full story: ://www.fypower.org/news/?p=2869

Flex Your Power
://www.fypower.org/news/

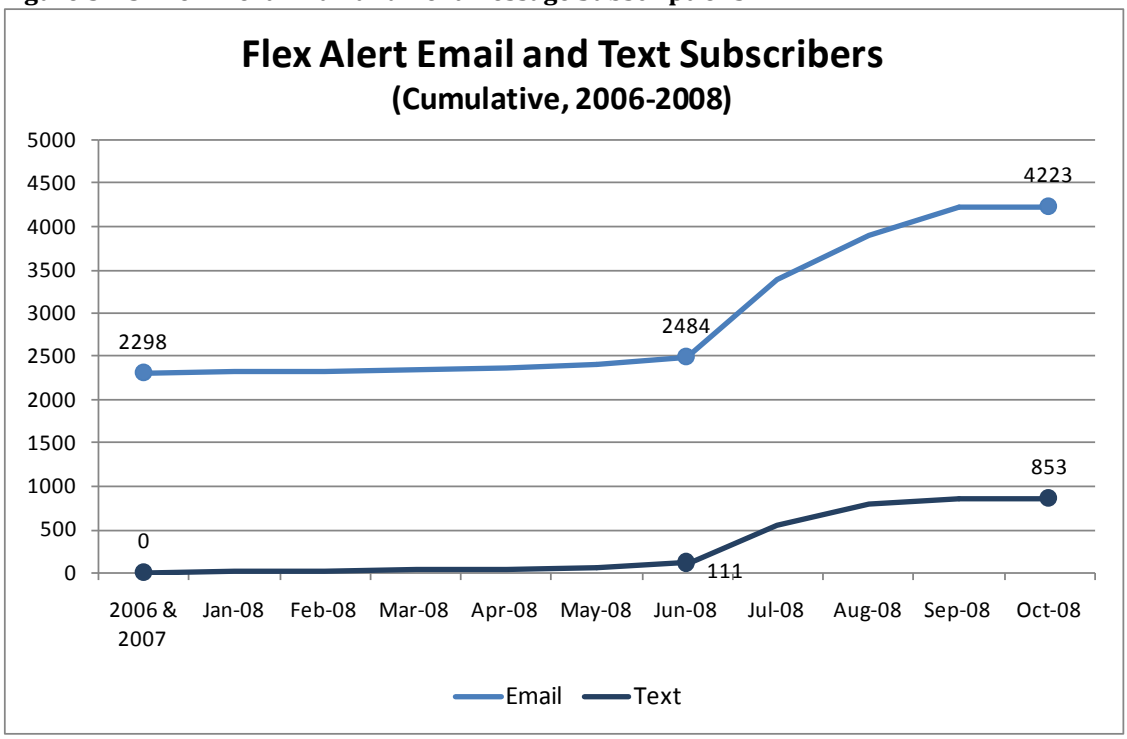
Summit Blue also signed up an anonymous corporation to receive the corporate Flex Alert email notifications as part of the Flex Alert Network, but no unique "corporate" emails were received during the July 2008 Flex Alert; rather, the same email that went to individual subscribers was also distributed to corporations.

In addition to email notifications, Summit Blue staff also signed up to receive the advertised text message notifications on their cell phones, but no text messages were received.

3.4.2 Flex Alert Email and Text Message Subscriptions

Figure 3-15 displays the cumulative number of Flex Alert email and text message (SMS) subscriptions through October 2008. Summit Blue's previous evaluation found that there were 2298 email subscriptions in 2006 and 2007; in 2008, 1925 additional subscriptions were received for a total of 4223 subscribers as of October 2008. Nearly three-quarters of these new subscriptions were received *after* the July 2008 Flex Alert (1383 subscriptions). There were 853 text message subscriptions in 2008.

Figure 3-15. Flex Alert Email and Text Message Subscriptions



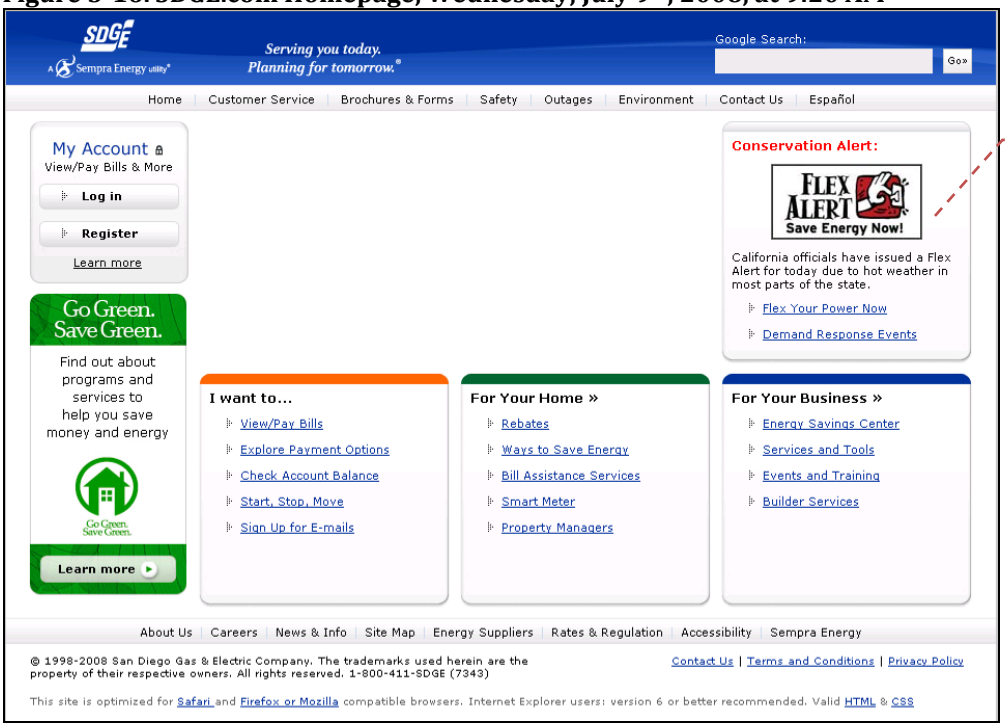
3.5 IOU Websites

Summit Blue reviewed the alerts displayed on the websites of the three major investor-owned utilities: San Diego Gas & Electric (SDG&E), Southern California Edison (SCE), and Pacific Gas & Electric (PG&E). Compared to a similar review conducted by Summit Blue last year, the IOU websites had improved consistency in terms of using the correct logo and terminology to describe the Flex Alert event.

3.5.1 San Diego Gas & Electric (www.sdge.com)

Figure 3-16 presents a screenshot of the SDG&E homepage on Wednesday, July 9th. The Flex Alert: Save Energy Now! logo was displayed in the upper right-hand corner of the screen, under the phrase "Conservation Alert." There were links to the FYPower.org website as well as a page within the SDG&E website describing other demand response program events in effect, although the text did not encourage viewers to click through for more details. The text read "California officials have issued a Flex Alert for today due to hot weather in most parts of the state." The "Conservation Alert" text and link to the "Flex Your Power Now" website appeared on the SDG&E website by noon on Tuesday, the first day of the Flex Alert period.

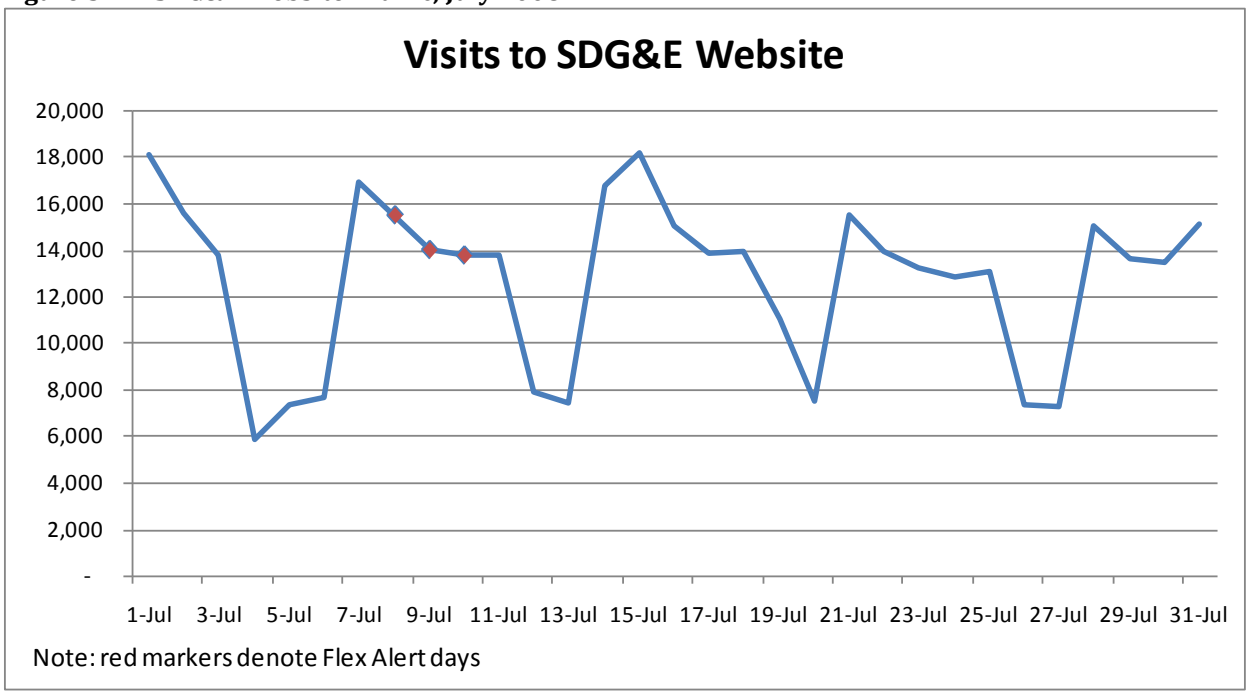
Figure 3-16. SDGE.com Homepage, Wednesday, July 9th, 2008, at 9:20 AM



Clicking on the Flex Alert logo or the "Flex Your Power Now" text below takes visitors to the www.fypower.org homepage

Figure 3-17 displays visits to the SDG&E website over the month of July 2008. Traffic during the Flex Alert period is not noticeably higher than in the preceding and subsequent weeks.

Figure 3-17. SDG&E Website Traffic, July 2008



3.5.2 Southern California Edison (www.sce.com)

The Southern California Edison homepage (Figure 3-18) combined the Flex Alert: Save Energy Now! logo with a larger banner image that reads "Conservation Alert: please limit your electricity usage." The alert graphic was very prominent on the page. Clicking on the "Learn More" link took visitors to another page within the SCE website, "High Heat" (Figure 3-19). The Flex Alert logo and information were posted on the SCE website by 9 AM on Tuesday, the first day of the Flex Alert, and remained consistent throughout the Flex Alert period.

Figure 3-18. SCE.com Homepage, Wednesday, July 9th, 2008, at 9:20 AM

Clicking on the banner graphic takes the visitor to the High Heat page (shown in Figure 3-19)

The "High Heat" page within the SCE website also displayed the Flex Alert logo and provided information on a variety of topics related to the heat wave, including some tips on heat safety and energy conservation. However, the energy conservation tips were at the bottom of the page and were not entirely consistent with the three major actions requested by the Flex Alert campaign. SCE posted two sets of tips ("Save Energy" and "Tips") which included suggestions such as filling up the refrigerator with water bottles and running the pool filter as little as possible. Setting the thermostat at 78 degrees or higher and "giving appliances the afternoon off" (a variation on SCE's old "give your appliances the day off" campaign) are mentioned towards the bottom of the page. There was a link to the Flex Your Power website but no indication that it is connected to the Flex Alert; the link was provided within a list of other relevant links such as CAISO.

Figure 3-19. SCE.com/heat Webpage, Wednesday, July 9th, 2008, at 9:20 AM

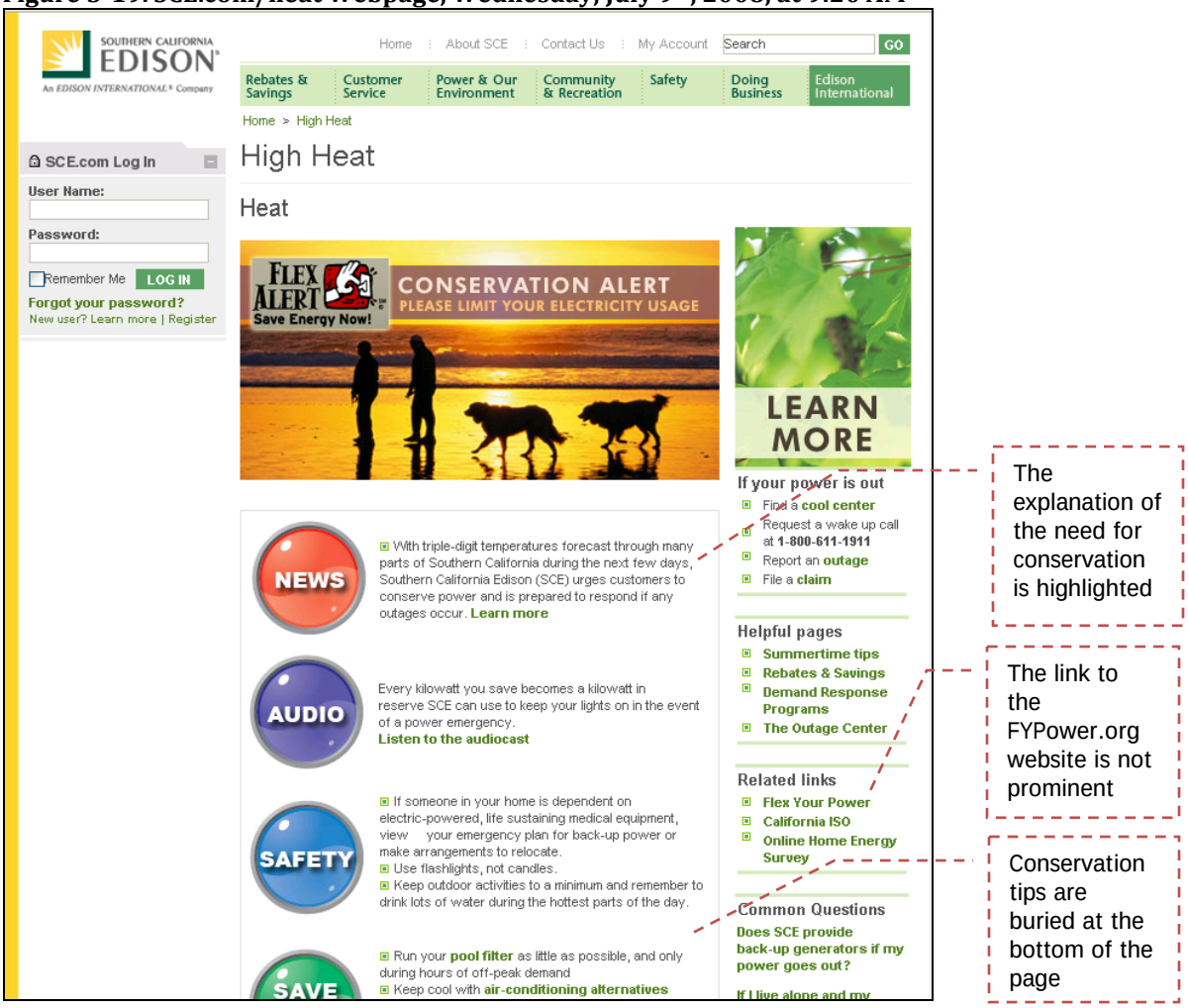
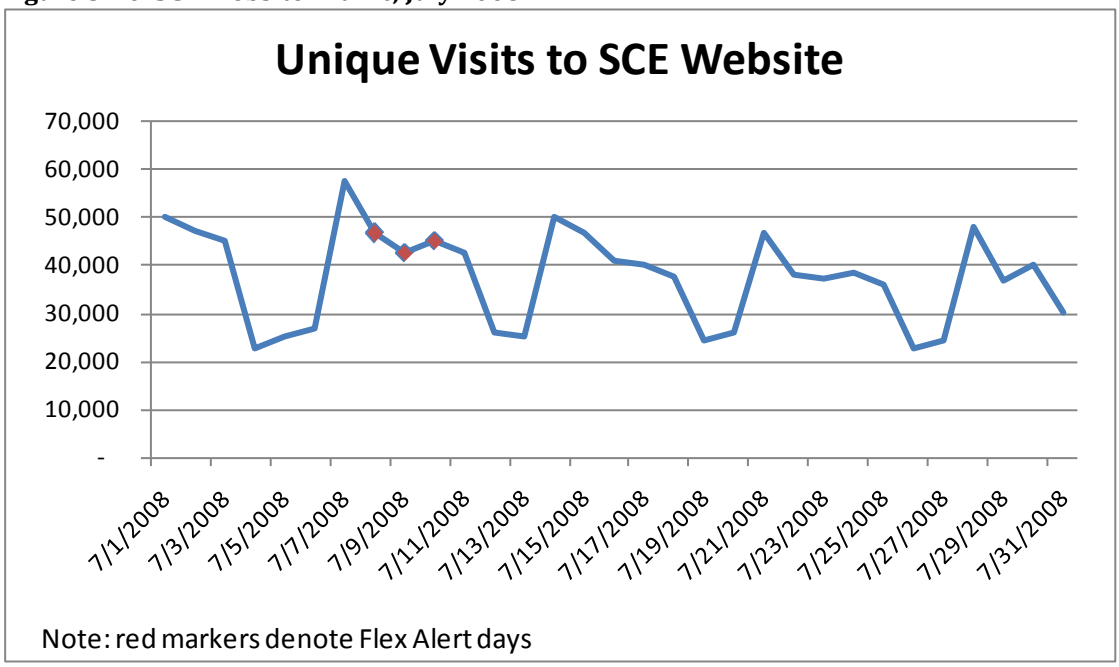


Figure 3-22 displays the number of unique visitors to the SCE homepage over the month of July 2008. Traffic to the SCE website during the Flex Alert was slightly elevated over typical traffic for mid-week (as observed in Summit Blue's previous evaluation report, the IOU websites seem to get increased traffic on Mondays, perhaps due to people logging in and paying their utility bills, and then traffic tends to decrease over the course of the week). The average number of unique visits per day was 37,922 for the month of July. Daily visits to the www.sce.com/heat webpage were not tracked, but the total number of visits for the month was 1,236, or just 0.03% of all visits to the SCE website.

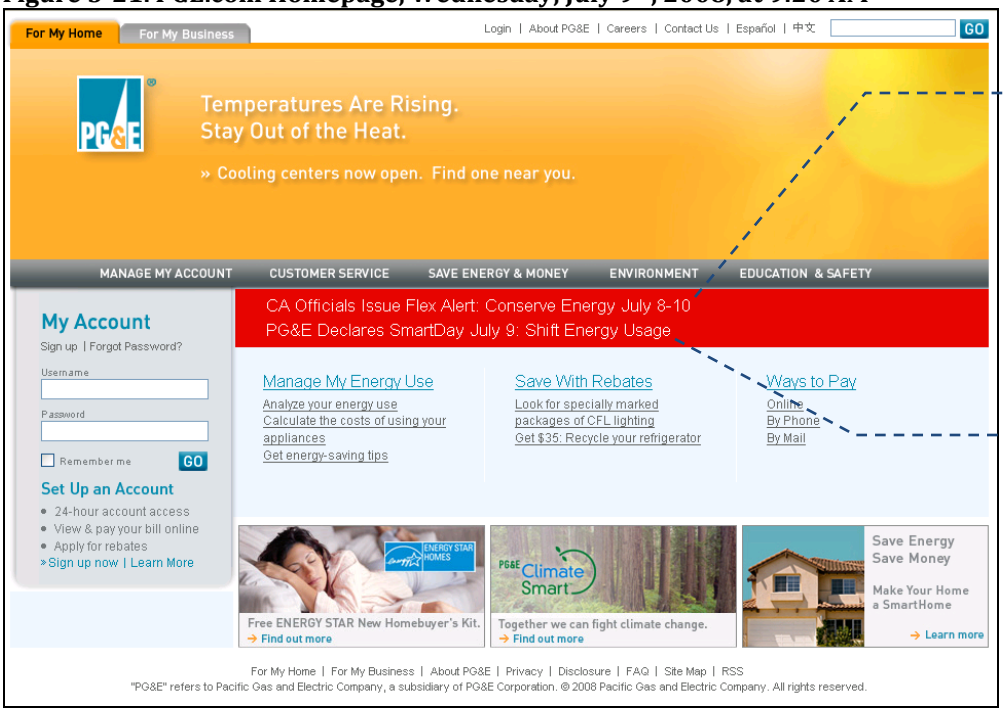
Figure 3-20. SCE Website Traffic, July 2008



3.5.3 Pacific Gas & Electric (www.pge.com)

Figure 3-21 presents a screenshot of the PG&E homepage on Wednesday, July 9th. The orange banner prominently reminded visitors that temperatures are rising and cooling centers are available to stay out of the heat. Below this, a red stripe indicated that a Flex Alert was in effect and also that a SmartDay had been declared, for participants in the PG&E SmartRate program. No Flex Alert logo was used on the page. Clicking on the text about the Flex Alert took visitors to the fypower.org/flexalert webpage for more information. The information about the Flex Alert appeared on the PG&E website at approximately 9:30 AM on Tuesday, the first day of the Flex Alert.

Figure 3-21. PGE.com Homepage, Wednesday, July 9th, 2008, at 9:20 AM

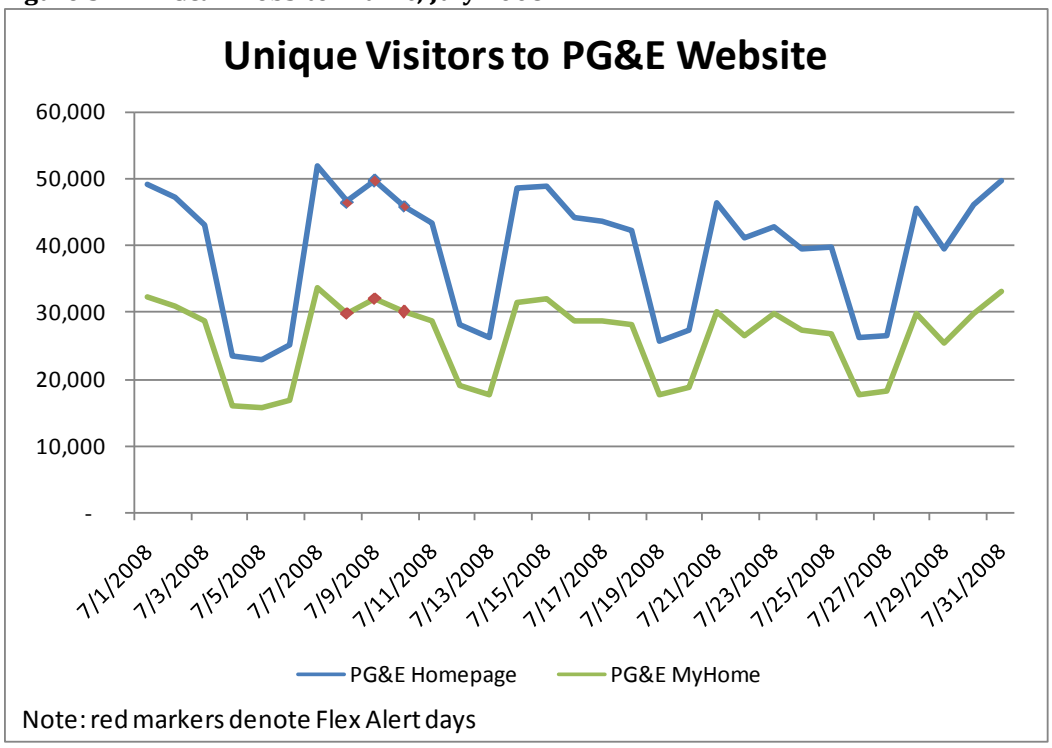


Clicking on the "CA Officials Issue Flex Alert Conserve Energy July 8-10" link brings visitors to the www.fypower.org/flexalert webpage

Customers on the SmartRate were notified that a SmartDay was called and a premium would be added to their bills for kWh used between 2 and 7 PM

Figure 3-22 displays the number of unique visitors to the PG&E homepage as well as the PG&E MyHome page (the page for residential customers) over the month of July 2008. Traffic to the PG&E website during the Flex Alert was very slightly elevated over typical traffic for mid-week. Note that some of the additional visitors to the website may have been seeking information on the SmartRate critical peak pricing program, as SmartDays were called for the same days as the Flex Alerts. Inversely, customers seeking out information on the Flex Alert may have learned about the SmartRate as well.

Figure 3-22. PG&E Website Traffic, July 2008



3.5.4 Summary of CAISO, FYP, and IOU Websites

Table 3-1 summarizes some of the prominent and useful features on the CAISO, FYP, and IOU websites. The FYP website provides a great deal of useful information that is relevant to the Flex Alert event. The IOU websites all prominently indicated that an alert was in effect and most provided a prominent link to the FYP website for more information, but additional opportunities for improvement remain. For instance, the alert message could be placed on the IOU websites the day before the event so that people have time to plan ahead for the next day; also, the alert messages displayed on the IOU websites could display the three major requested conservation actions so that even if the visitor does not click through to the FYP website, at least they got the core message of the Flex Alert campaign. The CAISO homepage did not display a Flex Alert message and the only mention of the Flex Alert was in a press release buried deep within the website. (See Section ☐for Summit Blue's recommendations to improve the Flex Alert's online presence.)

Table 3-1. Summary of FYP, IOU, and CAISO Website Features

	CAISO	FYP	SDG&E	SCE	PG&E
Prominent call for energy conservation on homepage		✓	✓	✓	✓
Flex Alert logo		✓	✓	✓	
Energy conservation tips		✓		✓	
Link to FYPower.org for more information		N/A	✓		✓
Explanation of need for energy conservation		✓		✓	
Information on peak demand	✓	✓			

4. REVIEW OF MEDIA COVERAGE OF JULY 2008 FLEX ALERT EVENT

Summit Blue enlisted Nationwide News Monitors to gather videos and transcripts of news broadcasts related to the Flex Alert event. This service gathered hundreds of stories from 48 different media outlets across the state of California.[4] Additionally, Summit Blue monitored news stories that appeared in California newspapers and on various websites. This section provides a summary of the news coverage of the July 2008 Flex Alert Event.

4.1 Qualitative Review of Television News Coverage

This section covers the qualitative review of television news stories collected by the Nationwide News Monitors service.

4.1.1 Phrases Used to Describe the Event

Unlike last year, the term "Flex Alert" was used the most often when reporting on CAISO's (and/or utilities') request for energy conservation in all of the major California media markets during all three event days. Some networks, such as ABC, also used the second most popular term, "power alert," in many media markets. Usually this term was followed in the same story by the phrase "Flex Alert," but sometimes "power alert" was the only term used throughout the entire story. Table 4-1 below identifies some of the more frequent terms used by the networks in the various media markets. Overall, "Flex Alert" was used by virtually every network (at least some of the time), and "power alert" or "flex power alert" were also used frequently.

[4] Note that several radio stations were included in the coverage (only one of which ran a Flex Alert-related news story), but since the monitoring of radio stations was not nearly as comprehensive as the monitoring of television stations, the focus of this analysis is on the television news coverage.

Table 4-1. Phrases Used by Television News Media Outlets to Describe Flex Alert Event

DMA	ABC	CBS	CW	FOX	NBC	UPN	Independent
Bakersfield		flex alert		flex alert	flex alert		
Chico		flex alert			flex alert		
Fresno	flex alert	flex alert		flex alert	flex alert stage 1 alert		
Los Angeles	flex alert power alert	flex alert power alert	flex alert flex power alert power alert stage 1 alert	flex alert stage 1 alert	flex alert		flex alert flex your power alert
Monterey		flex alert		flex alert	flex alert		
Palm Springs	flex alert stage 1 or stage 2 power alert	flex alert		flex alert	flex alert		
Sacramento	flex alert power alert	flex alert	flex alert	flex alert	flex alert power alert	flex alert	
San Diego	flex alert power alert	flex alert stage 1 alert	flex alert power alert	flex alert	flex alert power alert stage 1 alert		flex alert
San Francisco	flex alert power alert	flex alert	flex alert flex power alert	flex alert	flex alert power alert		flex alert
Santa Barbara		flex alert			flex alert		

In sharp contrast to last year, "Flex Alert" has been the single most frequent term used to describe these events.

4.1.2 Message Content

The majority of the relevant news broadcasts requested energy conservation from viewers. Generally, a discussion of the heat wave and the fires was adjacent to the report on the Flex Alert. The stories were typically consistent with the spirit of the Flex Alert with regards to the conservation actions requested, and those stories that did specify peak hours generally were accurate with the hours requested by CAISO (3-6 PM), but the specific hours were not mentioned as frequently as the more general "please conserve power today" message. Most stories cautioned against appliance usage in the afternoon or encouraged usage in the evening, and some noted specific times when appliance use should be avoided.

On the day before the first day of the alerts (July 7, 2008), most news stories announced that a Flex Alert had been called and explained what that meant. For example:

> *"…this week's heat wave has state energy operators calling for a Flex Alert for energy use. The Flex Alert means electricity customers are asked to voluntarily reduce their power consumption, especially during late afternoon hours when temperatures are highest."* [5]

This year, in contrast with last year's media coverage, the majority of news stories not only called the alert a "Flex Alert," they also stated the basic behaviors that are requested to conserve power. Furthermore, a number of news stories directed people to the website, flexyourpower.org, for updates on the alerts and for actions that they can take to conserve.

> *"The heat is on in California. And so is energy consumption. Now the California Independent System Operator has declared a Flex Alert beginning tomorrow and ending on Thursday. The ISO wants you to minimize your use of power, especially during the hours of 3 to 6 at night. That means putting your thermostat at 78 degrees and keeping your curtains closed. ... Go to flex your power dot org."* [6]

This year unusual phraseology such as "electrical emergencies" was not noted, though some news stories simply defined Flex Alerts as customers being asked voluntarily to reduce their power consumption, without providing any specific behaviors that should be taken or the time conservation is needed.

> *"California's power grid manager has issued a Flex Alert for tomorrow through Thursday. Officials are expecting high demands for electricity because of the hot weather being forecasted for this week. There is also a potential for the state's wildfires to disrupt power transmissions. The Flex Alert means electricity customers are asked to voluntarily reduce their power consumption."* [7]

General messages from the utilities, such as the following story quoting SCE on the first day of the alert (July 8, 2008), reminded customers about the risk of power outages because of the fire and heat. While it discussed one general action that should be taken, turning off lights, it also asked people to conserve whenever possible which could potentially undercut the emphasis that conservation is particularly needed today and during peak hours in particular.

> *"Southern California Edison reminds customers that with the fire, and hot weather, it is at risk to power outages. The company asks everyone to turn off unnecessary lights and conserve electricity whenever possible."* [8]

By the afternoon of the second and third day of the alert (July 9-10, 2008), news media coverage shifted from simply stating the basic message of the alert to discussing the fact that peak demand did not reach record levels, partially due to the conservation efforts.

> *"The current heat wave makes it difficult for people who manage California's electricity. Peak demand did not reach record levels today, conservationists spared the worst, Cal-ISO says it's*

[5] KBAK-CBS Bakersfield media market. July 7, 2008. 5pm.

[6] KMIR-NBC Palm Springs media market. July 7, 2008, 5pm.

[7] KION-CBS Monterey-Salinas. July 7, 2008, 5pm.

[8] KSBY-NBC Action News. Santa Barbara-Santa Maria-San Luis Obispo market. July 8, 2008, 11pm.

another Flex Your Power Day and officials want Californians to limit the use of electricity between 3 and 6pm. This is putting a strain on the power grid, including in the South Bay. And conservation is making a big difference." [9]

Following this news story was a report on Silicon Valley Power, a power company supplying electricity to IT companies like Intel and Applied Materials. The newscaster discussed the power company's action plan for conservation and then talked about the state's demand response program through the use of the "glow globe." Thus, once the fact that "today is again a Flex Alert day" is stated, the media went on to discuss the importance of conservation and through identifying success stories of conservation behaviors, the media showed how actual people and companies helped to keep the state from blackouts.

Some news stories also tried to quantify the viewers' response to the Flex Alerts. The NBC affiliate in Santa Barbara asked viewers whether they changed their power usage in a web poll; 72% said "yes," and 28% said "no." Note that the sampling was not random or representative of the overall population.

"The heat wave is putting a strain on the state's power resources. In tonight's action news web poll, we asked if you change your power use when a Flex Alert is issued. 72-percent said yes. 28-percent said no." [10]

Furthermore, by the third day of the alerts (July 10, 2008), state grid operators are mentioned in the news stories saying that blackouts are not expected because of Californians' conservation efforts. Yet another Flex Alert was called for that day.

"State power managers issued a Flex Alert today urging you to conserve electricity especially during the afternoon hours. Grid operators don't expect brownouts or rolling blackouts in part because so far this week Californians have answered the call to conserve." [11]

It is worth noting that while Northern California experienced a heat wave and most of the fires, much of Southern California's temperatures were average. It is interesting that a large number of news stories focusing on Flex Alerts came out of Southern California. In these stories, there is a sense of sympathy towards the northern part of the state, calling on people to conserve to help their neighbors in the north and the whole power grid. People understand that a statewide blackout would affect many millions of people in Southern California, but there is also a sense of unity which is consistent with the California pride element of the Flex Alert message itself.

"Flex Alert still every day this week we've been dealing with that. That's asking us to conserve energy because there was extreme heat in parts of California, not just southern California, but the central valley especially was dealing with it. That means if we can all do our part to share the energy. Excess heat warning again today for the mountains, hot, hot temperatures in some spots today." [12]

News media coverage did trail off considerably by the end of the second day and through the third day (July 9-10, 2008). (See Section 4.2 for more discussion on the number of television news stories

[9] KGO-ABC 7 6PM News. San Francisco-Oakland-San Jose market. July 9, 2008, 6pm.

[10] KSBY-NBC Action News 11pm. Santa Barbara-Santa Maria-San Luis Obispo market, July 9, 2008, 11pm.

[11] KNTV-NBC 3 Mornings San Francisco-Oakland-San Jose market, July 10, 2008 6:00am

[12] KSWB-WB Morning news. San Diego market, July 10, 2008 at 8:00am

related to the Flex Alert.) This might be due in part to the fact that on none of the days did the state reach the power use that was projected; and thus the alert was no longer thought to be sensational news, as blackouts were avoided. Therefore, the focus of the stories shifted to the success of conservation efforts, the reaction of viewers to the alerts, and the changes in people's behaviors in response to the alerts.

4.1.3 Visual Signals

The following section contains screen shots obtained during the week of the Flex Alert, July 7-10, 2008. They provide a representative sample of news stories aired around the state on the three event days (plus the day preceding the first event day).

Figure 4-1 is an image from the afternoon of the day before the first event day (July 7, 2008) from the CBS affiliate in the Fresno area. Figure 4-2 is also an image from July 7, 2008, from the NBC affiliate in Bakersfield. Figure 4-3 was taken on July 8, 2008 in the morning, from CBS in the San Francisco market. In the beginning of the event days, most news stories showed images of the either the CAISO command center, showing various switch boards and computers, or the demand graph from the CAISO website. In general, a banner appeared on the bottom of the screen stating that a Flex Alert was issued or that CAISO called for conservation. In these news reports, conservation actions and the general message are not discussed, other than a general call for conservation of power.

Figure 4-1. KGPE-CBS 47 News at 5. Fresno-Visalia market. July 7, 2008, 5pm

Figure 4-2. KGET NBC News 17. Bakersfield market. July 7, 2008, 5pm.

Figure 4-3. KPIX CBS Eyewitness News. San Francisco-Oakland-San Jose market. July 8, 2008, 5am.

On the first alert day (July 8, 2008), some television channels began to put on their screen in larger letters that a Flex Alert was issued and reported what conservation actions should be taken (Figure 4-5). However, none of these broadcasts featured the Flex Alert logo, unlike similar news broadcasts about Spare the Air Day or other public alerts which do incorporate the accompanying alert logo.

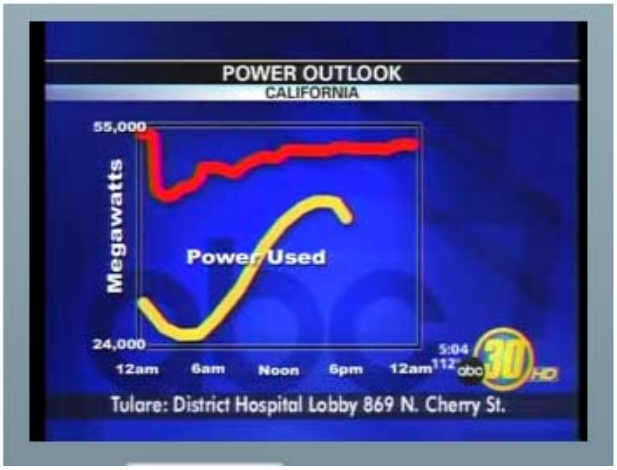
Figure 4-4. KRON-4 Mornings. San Francisco-Oakland-San Jose market. July 8, 2008, 5am.

Figure 4-5. XETV Fox 6 News. San Diego market. July 8, 2008, 5am.

By the second and third event days, some news channels went beyond simple reports about actions for power conservation and created polls in an attempt to identify what effect the Flex Alerts (and media coverage) were having on the public, for instance, what percentage of people altered their power usage when a Flex Alert was called (Figure 4-6). Furthermore, as discussed in Section 4.1.2, news reports focused on the success stories, i.e., how conservation kept blackouts from happening. Figure 4-7 displays the CAISO demand graph which shows that peak demand did not approach the generation capacity. These news reports attempted to dig deeper than the initial coverage of the Flex Alert. The number of stories on the second and third event days began to decline dramatically as well (see Figure 4-10 in the next section for more on this decline).

Figure 4-6. KSBY-NBC Action News 11pm. Santa Barbara-Santa Maria-San Luis Obispo market. July 9, 2008, 11pm.

Figure 4-7. KFSN-ABC Action News at 5. Fresno-Visalia market. July 10, 2008.



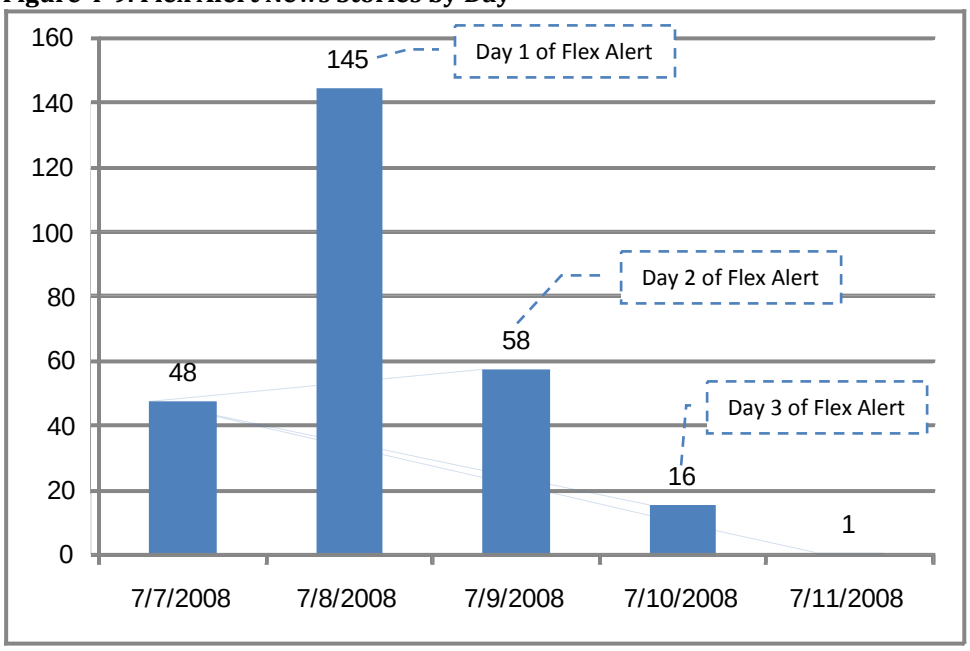
Finally, by July 10, 2008, the third day of the Flex Alert, the CAISO control room images returned (Figure 4-8). By this time, nearly all reporters mentioned that state officials do not expect power outages partly because of Californians' conservation efforts.

Figure 4-8. KNTV-NBC 3 Midday. San Francisco-Oakland-San Jose market. July 10, 2008, 11am.

4.2 Quantitative Review of Television News Coverage

Figure 4-9 displays the number of news stories related to the Flex Alert by day over the week of the Flex Alert (Monday, July 7th through Friday, July 11th). This analysis covers the news broadcasts of 47 television stations located across the state and one radio station located in Sacramento. Over half of all the Flex Alert news stories (145 stories) occurred on Tuesday, July 8th, which was the first day of the Flex Alert. By Thursday, the third and final day of the Flex Alert period, there were just 16 news stories.

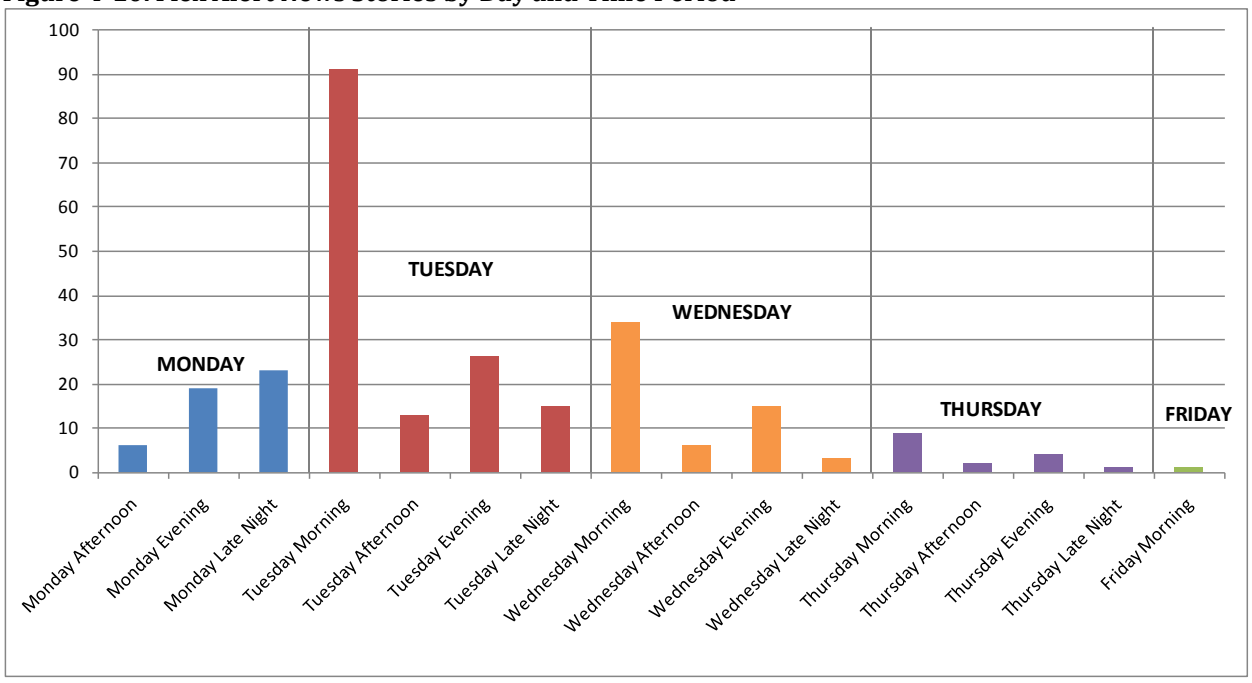
Figure 4-9. Flex Alert News Stories by Day



Source: Summit Blue analysis of news stories collected by Nationwide News Monitors

Figure 4-10 displays the number of Flex Alert news stories by time period over the same week. Note the spike in coverage on Tuesday morning with a total of more than 90 stories, followed by a dramatic decline (just over 30 on Wednesday morning, and less than 10 on Thursday morning) over the rest of the Flex Alert period.

Figure 4-10. Flex Alert News Stories by Day and Time Period

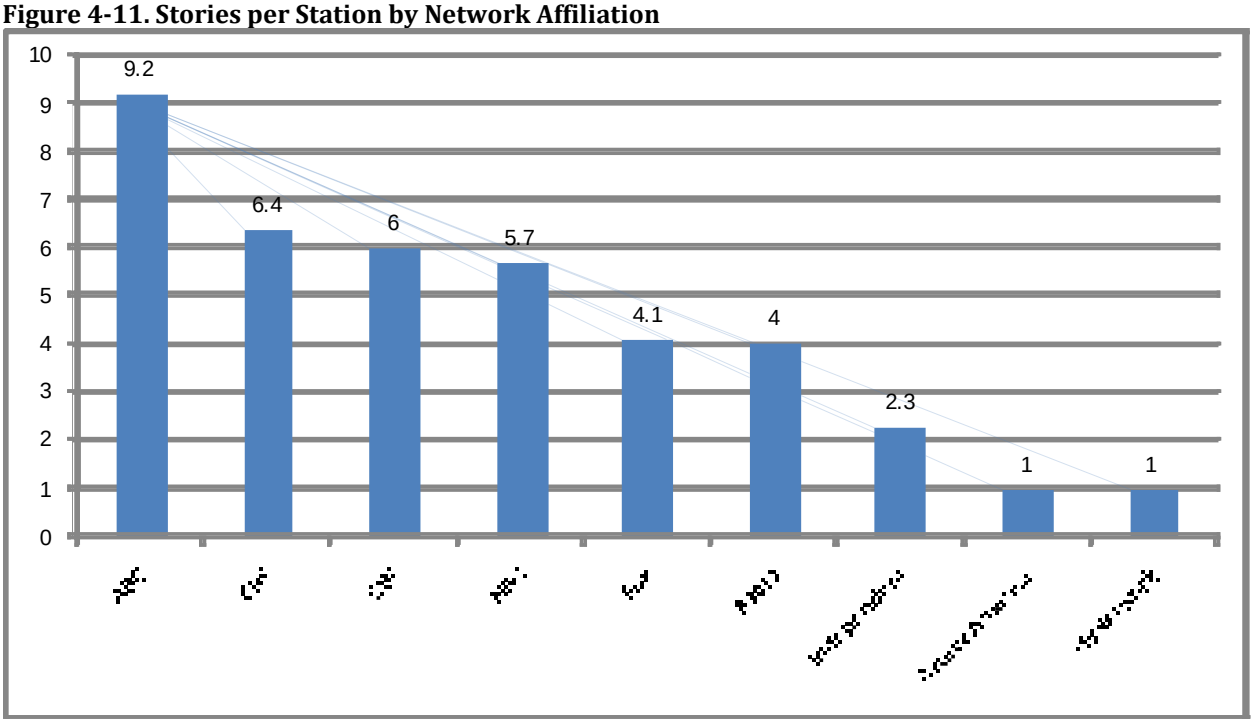


Source: Summit Blue analysis of news stories collected by Nationwide News Monitors

The two preceding figures indicate that while the news media did latch on to the Flex Alert story early in the week when it was considered "breaking news," many stations did not continue to remind viewers and listeners that the Flex Alert was in effect over the three-day Flex Alert period (Tuesday through Thursday). This demonstrates the continuing need for paid commercials to reinforce the Flex Alert message over multi-day events.

Some stations did provide more comprehensive coverage of the Flex Alert than others. Figure 4-11 displays the average number of stories per station by network affiliation. In particular, ABC affiliate stations had significantly more Flex Alert stories per station than those affiliated with other networks. However, wide variations existed among ABC affiliate stations; for instance, the Palm Springs ABC affiliate aired 16 stories related to the Flex Alert, whereas the San Diego ABC affiliate only aired five stories.

Figure 4-11. Stories per Station by Network Affiliation



Source: Summit Blue analysis of news stories collected by Nationwide News Monitors

4.3 Newspaper Coverage

Summit Blue reviewed Flex Alert-related stories from newspapers across the state. While newspapers are not a significant part of the Flex Alert media strategy due to the quick turnaround needed to publicize the alerts, the newspaper articles provide a good narrative of the Flex Alert and related events (i.e., the heat wave and wildfires that contributed to the need for the Flex Alert).

4.3.1 Reuters

The Reuters news service posted an article regarding the Flex Alert on Monday, July 7, 2008, "California grid urges conservation amid heat, fires." The article explained that the fires and high heat were causing California's power grid operators to issue a Flex Alert, asking Californians to "curb power use Tuesday through Thursday during the peak-demand time of about 3 p.m. to 6 p.m.

local time." It also discussed the outages in the Santa Barbara area on the previous Sunday, which were caused by the wildfires burning down the poles that hold up transmission and distribution lines. The article discussed the forecasted peak demand for the week and the forecasted high temperatures of 100 degrees or higher for the Inland Empire (east of Los Angeles) and the Sacramento region in particular.

4.3.2 Northern California Newspapers

The *Sacramento Bee* published a story on Tuesday, July 8, 2008, "Energy alert today." The article began with "Don't touch that (thermostat) dial – there's an energy conservation effort in effect. Residents throughout California are asked to conserve energy, especially during peak hours of 3 to 6 p.m. State energy officials issued a Flex Alert today because of anticipated high electricity demand." The article explained that CAISO issued the alert because of the heat wave and the wildfires threatening the power grid, and that shortages were not expected, but demand could reach the record high. The article listed the three major conservation actions and points the reader to the CAISO website for more information.

The *San Francisco Chronicle* published a series of stories on Wednesday, July 9, 2008, related to the heat wave and Flex Alert. The first story, "More heat marks to be threatened today," focused mainly on the record high temperatures in the Bay Area. Temperatures exceeding 100 degrees were expected for the inland portion of the Bay Area, with highs in the 80s expected in San Francisco and other coastal areas. The article discussed the cooling stations available to residents, the fire danger alerts, the Bay Area Air Quality Management District's Spare the Air Day, and the need for energy conservation. The article concluded with "Peak demand for electrical power this week could approach the record of 50,270 megawatts, set July 24, 2006, according to the California Independent System Operator, which runs the state's power grid. The agency has declared a flex alert through Thursday, urging people to reduce their energy use during high-demand hours in the late afternoon." A follow-up story later on Wednesday, "High temperature records fall around Bay Area," focused on the record high temperatures set on Tuesday (for example, 101 degrees in Napa, 102 in San Rafael, 106 in Concord). The article reiterated that cooling centers are open, that the Flex Alert is in effect until Thursday, and that due to air quality issues, children, the elderly, and those with breathing problems are recommended to stay indoors. The article ended with tips on staying cool, but no energy conservation tips.

The *Chronicle* ran a story on Wednesday, "Heat could push state's power use to record." The article explained that the triple-digit temperatures could push the state's electricity use to record highs, although blackouts are not expected. The article stated that "the ISO has asked all Californians to conserve power anyway. Turning off unnecessary lights and setting thermostats no lower than 78 degrees would help, as would running big appliances – such as washers and driers – only in the early morning or evening, when statewide power use is lowest." Finally, Stephanie McCorkle of CAISO was quoted as saying that conservation "helped prevent Tuesday's power use from rising as far as expected."

Another article on the heat wave appeared in the Thursday, July 10, 2008 edition of the *Chronicle*, but did not mention the need for energy conservation. The article, "Heat wave eases thanks to onshore breeze," discussed the unexpected onshore breeze that lowered temperatures in the Bay Area on Wednesday. While some of the inland cities still topped 100 degrees, San Francisco's high temperature on Wednesday was just 77 degrees.

4.3.3 Southern California Newspapers

Several of the smaller regional newspapers published stories on the Flex Alert on Tuesday, July 8, 2008, including the *La Jolla Light* (San Diego region) and the *Desert Sun* (Palm Springs region). The *La Jolla Light* article, "Flex Alert Declared," was nearly an exact reproduction of the text from the Flex Your Power e-Newswire article about the Flex Alert (shown above in Figure 3-10). The three major conservation actions promoted by the campaign were highlighted (set thermostat to 78 degrees or higher, turn off unneeded lights, and avoid the use of appliances until after 7 PM). The *Desert Sun* article, "Californians asked to conserve energy: Heat, wildfires concern officials," explained that conservation was requested between 3 and 6 p.m., Tuesday through Thursday. An SCE spokesperson, Gil Alexander, was quoted as saying that blackouts are not expected for the Coachella Valley unless something "unforeseeable happens," and that he recommended "giving your appliances the afternoon off, turning up air conditioners to 75 degrees, and using fans as well as blocking the sun on hot summer days." Note that most Flex Alert messaging requests that Californians set their thermostats to 78 degrees, not 75.

The region's larger newspapers did not weigh in on the Flex Alert topic until Wednesday, July 9, 2008. The *Los Angeles Times* published only one story related to the Flex Alert, "Southland heat wave expected to linger." The article started with a brief description of the excessive heat warning issued for the inland Los Angeles County region and then discussed the Flex Alert and the need for conservation between 3 and 6 p.m. Gregg Fishman, a spokesperson for CAISO, was quoted as saying on Tuesday, "We issued the flex alert in recognition of the heat wave. It's been incredibly hot. What we're really looking at today is how hot is it going to get in the really populated areas including Los Angeles and along the coast. It's been relatively cool, in the mid-80s. If it gets significantly warmer, we will see our load rise considerably today." The remainder of the article focused on the weather forecast for various regions.

The *San Diego Union-Tribune* published several articles on Wednesday and Thursday related to the Flex Alert. The first article, "Cooler SoCal weather helps curb state's energy demand," explained that temperatures on Tuesday and Wednesday were not as high as expected in many parts of the state and therefore the peak demand did not reach the forecasted levels. Stephanie McCorkle of CAISO was quoted as saying that the worst of the heat wave was over, but that Californians were still urged to avoid unnecessary energy use during the afternoon hours. The article stated that Wednesday's peak demand was 43,683 MW, compared to the forecasted peak demand of 48,607 MW. In another *Union-Tribune* article on Wednesday, "Power demand met, despite heat, smoke," Stephanie McCorkle explained that cooler than expected temperatures helped lower the peak demand, but was careful to point out that conservation played a key role as well, and said "we need to continue it through Thursday. We can't let our guard down."

The *North County Times* (San Diego region) published a story on Wednesday, "Heat wave triggers early call for conservation." The article began with "The week's heat wave is expected to push Californians' electricity demand higher than anytime since last summer, state power grid regulators said Tuesday. Several thousand North County volunteers might have their air conditioners shut off if demand approaches capacity." The article then discussed the forecasted high temperatures in the region. The need for energy conservation was not discussed until halfway through the article, when CAISO was described as requesting that people "run appliances such as pool pumps and washing machines before 3 p.m. or after 6 p.m. on Tuesday, Wednesday, and Thursday." The article notes that on Tuesday, the state's power usage peaked at 87% of capacity, after CAISO had forecasted that it would reach 94% of capacity; Stephanie McCorkle of CAISO credited that difference to Californians who were responding to the alert. The article discussed the possibility of SDG&E and

other utilities shutting off volunteers' air conditioner units (presumably as part of an A/C cycling program), and also discussed future plans for smart meters and time-differentiated electric rates.

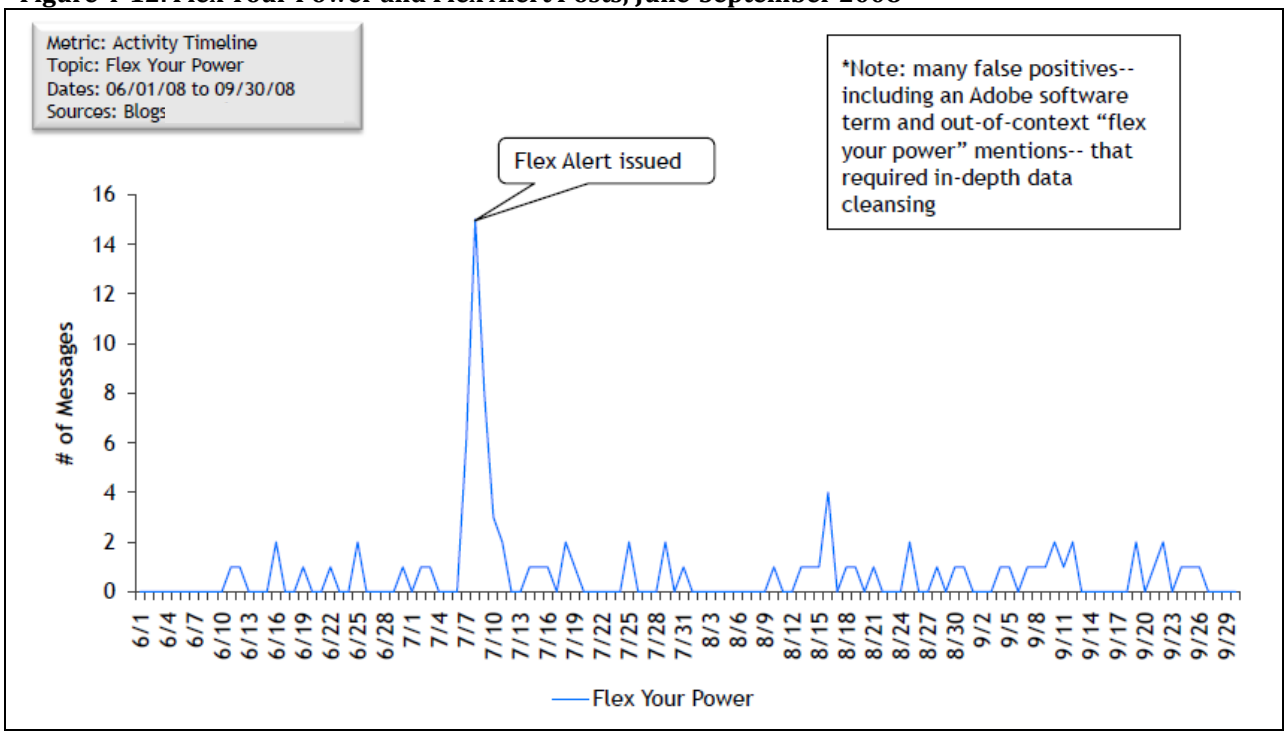
4.4 Social Media Analysis

Summit Blue subcontracted *Collective Intellect* to analyze social media content from blogs, news, and message board sites regarding variations of the terms "Flex Alert" and/or "Flex Your Power" (FYP), in the service of discovery around community engagement with the campaign and its language. This section highlights the top findings of this analysis. The entire report can be found in Appendix J: Collective Intellect Social Media Insight Report. Throughout this analysis, the term "posts" refers to blogs, board messages, and news.

4.4.1 Overview of Social Media Coverage of Flex Alert

Figure 4-12 identifies the number of blogs discussing "Flex Your Power" and/or "Flex Alert" from June to September, 2008. These blogs are all California energy related and some blogs have been excluded as being contextually off topic (see note in Figure 4-12). Online conversation quantity was low, with the exception of a spike during the July 8-10, 2008 Flex Alert event. In order to compare the Flex Alert campaign with another environmental social marketing campaign, Collective Intellect also provided data for the Bay Area's Spare the Air campaign. On a posts-per-day basis, Spare the Air generated nine confirmed California blog posts on its more active day, compared to 15 blog posts related to the Flex Alert on its best day. This number does not include news or board posts.

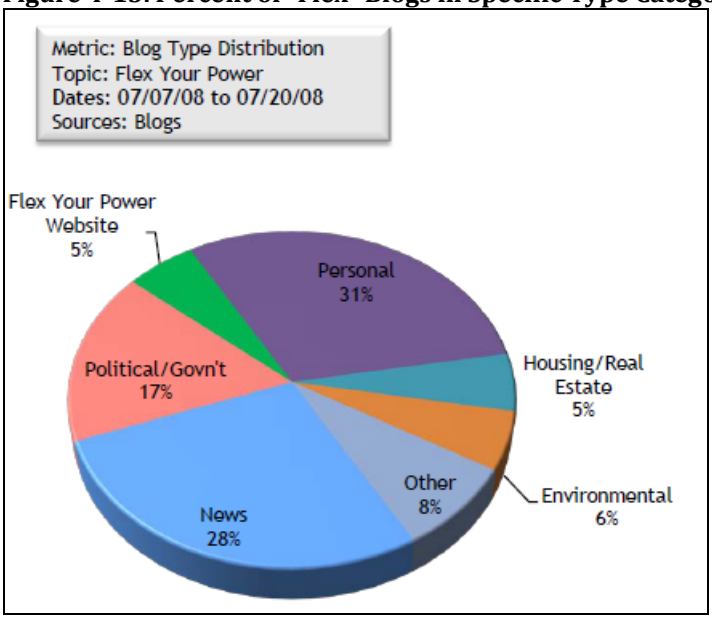
Figure 4-12. Flex Your Power and Flex Alert Posts, June-September 2008



A further drill-down into blog activity immediately during and shortly after the Flex Alert event (7/7/08-7/20/08) surfaced key insights (Figure 4-13). Mentions of the "Flex" terms were found most frequently in personal blogs. *This information provides fertile opportunities for engagement,*

and can generate influencer lists for outreach. The total number of blogs during this period was 34. The sentiment composition of these blogs was 22% positive, 67% neutral, and 11% negative. The large number of neutral blogs were likely due to the reposting of the Flex Alert press release.

Figure 4-13. Percent of "Flex" Blogs in Specific Type Categories, 7/7/08 – 7/20/08



Spare the Air conversations also received light posting during the reporting period. As with "Flex Your Power," Spare the Air was most often mentioned in personal blogs that did not have specific foci. However, music blogs had a strong presence as bloggers discussed the Spare the Air Festival. The festival was the primary driver of positive sentiment. *This could be an insight regarding message/marketing partnerships for Flex Alerts.*

The sentiment composition of posts (6/1/08-9/30/08) towards Flex Your Power and Flex Alerts is: positive, 48.2%; neutral, 25.9%; and negative, 25.9%. The large positive sentiment (48.2%) seen in posts relates in part to mentions of the FYP website as a resource for energy saving advice. News stories tend to have neutral sentiment, and the large number of Flex Alert-related news stories drove a larger than typical neutral sentiment percentage. Overall, the ratios are within expected range.

The majority of posts during the 3-day alert were found in news (42.3%). During the remainder of the analysis period, most posts occurred within social media (blogs [56.3%] and boards [1.3%]). *Flex Alerts have an opportunity to leverage both arenas through targeted outreach before and during the alerts*.

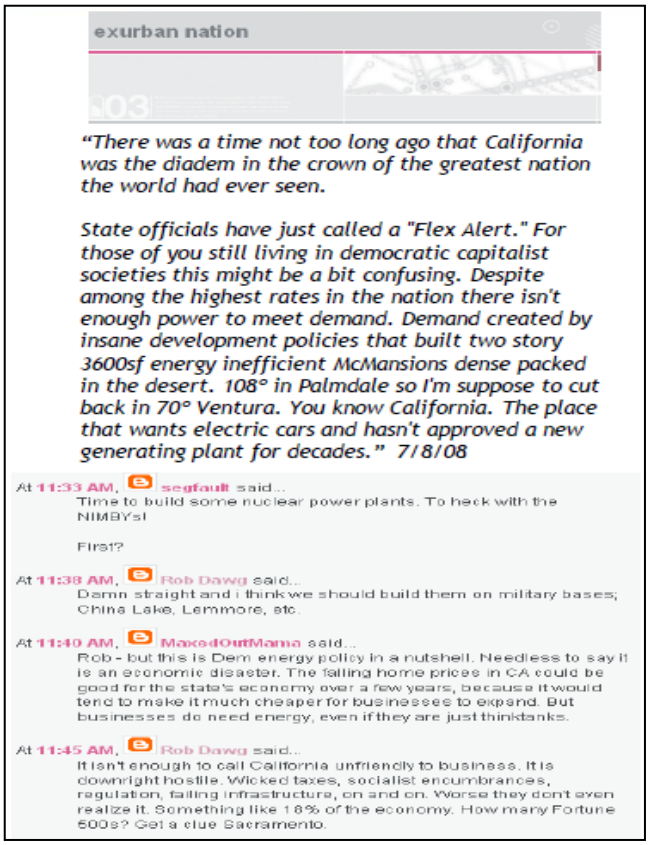
The sample verbatim section in Appendix J provides a representative sample of blogs for the period of June-September, 2008. Blogs from June praise the energy saving tips that can be found on the Flex Your Power website. July blogs restate that there is a Flex Alert in effect and ask others to conserve. Some blogs are critical of the Flex Alert, and urge others to send letters to their legislators to ask them for new power plants. In August, blogs described a Flex Your Power energy-efficient appliance giveaway, energy-efficient remodeling, and solar installations. There is also some criticism of the Flex Alert notification language. Finally, in September, there is discussion of corporations teaming up with Flex Your Power and their local utilities during Flex Alerts as well as the energy efficiency educational tips of the Flex Your Power website.

4.4.2 Selected Blog Post Analysis with Recommendations

Blog Name: Raising California
Blog Type: Mom Blog
Web Address: http://raisingcalifornia.blogspot.com/
Post Address: http://raisingcalifornia.blogspot.com/2008/07/flex-alert-issued-for-california.html
Did this post link to FYP website? Yes
Comments generated by FYP post: 0

This "Mom Blogger" posted about the Flex Alert on July 8th. This post mentioned the alert, what to do to reduce energy use, and provided two links to the FYP website. This kind of post was typical during the event and highlights the wide variety of blog types that discuss the campaign and alert.

Mom blogs are a particularly interesting potential as most of the writers work from the home and are drivers of household decisions. CI can provide a list of bloggers in the "Mom Blog" space, and recommends engagement with this list, along with similar "Real Estate" and "Political" sets.


exurban nation

"There was a time not too long ago that California was the diadem in the crown of the greatest nation the world had ever seen.

State officials have just called a "Flex Alert." For those of you still living in democratic capitalist societies this might be a bit confusing. Despite among the highest rates in the nation there isn't enough power to meet demand. Demand created by insane development policies that built two story 3600sf energy inefficient McMansions dense packed in the desert. 108° in Palmdale so I'm suppose to cut back in 70° Ventura. You know California. The place that wants electric cars and hasn't approved a new generating plant for decades." 7/8/08

At 11:33 AM, segfault said...
Time to build some nuclear power plants. To heck with the NIMBYs!

First?

At 11:38 AM, Rob Dawg said...
Damn straight and i think we should build them on military bases; China Lake, Lemmore, etc.

At 11:40 AM, MaxedOutMama said...
Rob - but this is Dem energy policy in a nutshell. Needless to say it is an economic disaster. The falling home prices in CA could be good for the state's economy over a few years, because it would tend to make it much cheaper for businesses to expand. But businesses do need energy, even if they are just thinktanks.

At 11:45 AM, Rob Dawg said...
It isn't enough to call California unfriendly to business. It is downright hostile. Wicked taxes, socialist encumbrances, regulation, failing infrastructure, on and on. Worse they don't even realize it. Something like 18% of the economy. How many Fortune 500s? Get a clue Sacramento.

Blog Name: exurban nation
Blog Type: Housing/Politics/Economics
Web Address:
http://exurbannation.blogspot.com/
Post Address:
http://exurbannation.blogspot.com/2008/07/headlong-into-third-world.html

Did this post link to FYP website? No (but did show FYP logo)
Comments generated by FYP post: 22

Unlike many of the other postings on the Flex Alert, this post generated a great deal of commentary. The controversial nature of this message content, coupled with the popularity of the blog, created fertile ground for the discussion that followed the brief blog post (found in its entirety at the left). The discussion did not specifically deal with the Flex Alert, but rather with energy topics in general. Reaching targets within the context of spirited discussion is an authentic and very effective engagement strategy.

Source: Napa Valley Register
Blog Type: Opinion Section
Web Address: http://www.napavalleyregister.com/
Post Address:
http://www.napavalleyregister.com/articles/2008/08/25/opinion/commentary/doc48b2359ddd0c3213907789.txt
Did this post link to FYP website? No
Comments generated by FYP post: 52

This post originated in the op/ed section of an online newspaper. This author describes his view of the Flex Your Power campaign as part of a large conspiracy to "….convince the public to lower their standard of living…." The selection at right exhibits a small portion of the longer article, which drove significant conversation.

Such polarizing content creates strong emotion and generates response. Commentary analysis offers insight into diverse opinions. Not everyone has the time to maintain a blog site, so the quickness and ease of leaving a comment can offer a broad range of opinions. The comment on the site is particularly fascinating and provides key information about non-compliance, and an opportunity to educate against misperception. See the text of the blog and a comment below.

napavalley register.com

The "Flex Your Power" campaign's primary funding comes from the Public Goods Charge. This is a non-bypassable surcharge imposed on all PG&E customers. Take a closer look at your bill and you will see it called a Public Purpose Programs charge. It turns out you are paying for the TV propaganda ads. The logic here is to use a customer tax to convince the public to lower their standard of living rather than convincing Congress to lift their ban on energy sources." 8/25/08

Comment

kevinwrote on Aug 25, 2008 1:21 PM: " Everytime PGE gives one of their "Flex alerts" that they are running low on power and we are supposed to turn off our appliances, I immediately TURN ON every appliance I can find. BUILD more power plants is the appropriate response, PGE, not having us sitting around sweating like some third world country... "

4.4.3 Social Media Coverage of IOUs

4.4.4 Highlighted Companies: PG&E, Southern California Edison & Sempra Energy

For the timeframe 07/07/2008 to 09/30/2008, sentiment is similarly positive for selected utility companies. Figure 4-14 below identifies the sentiment breakout for SCE, Sempra (SDG&E), and PG&E.

Figure 4-14. Sentiment Towards Selected Utilities

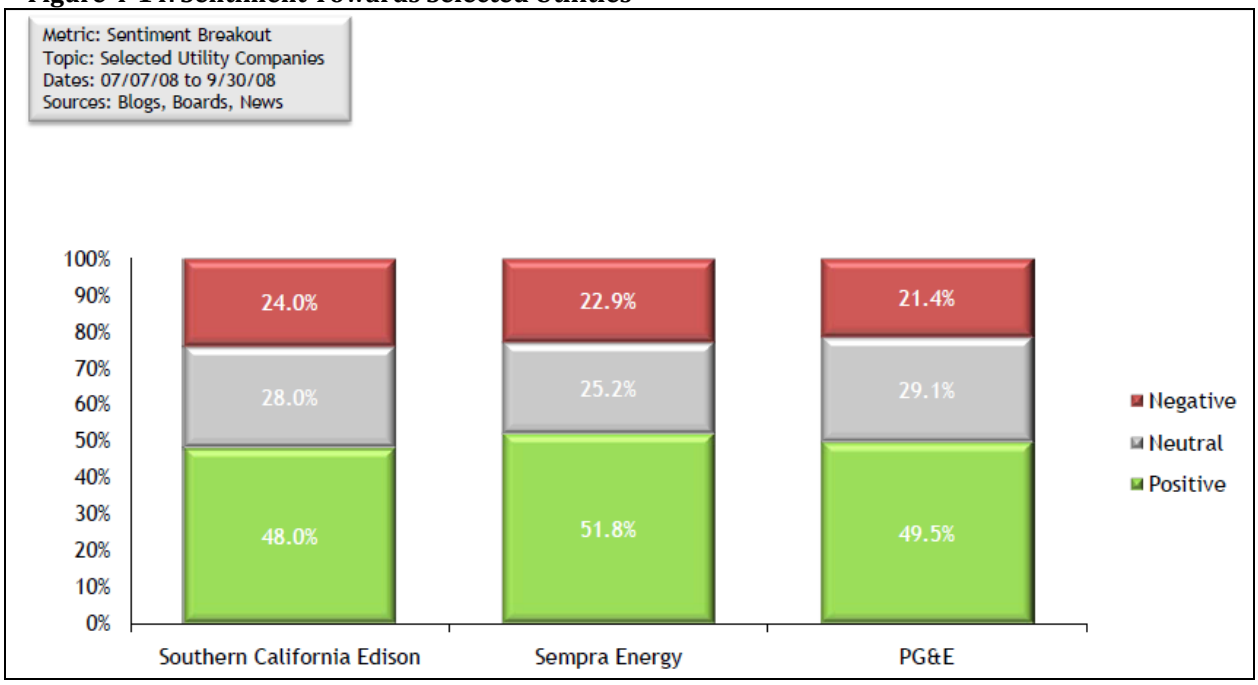
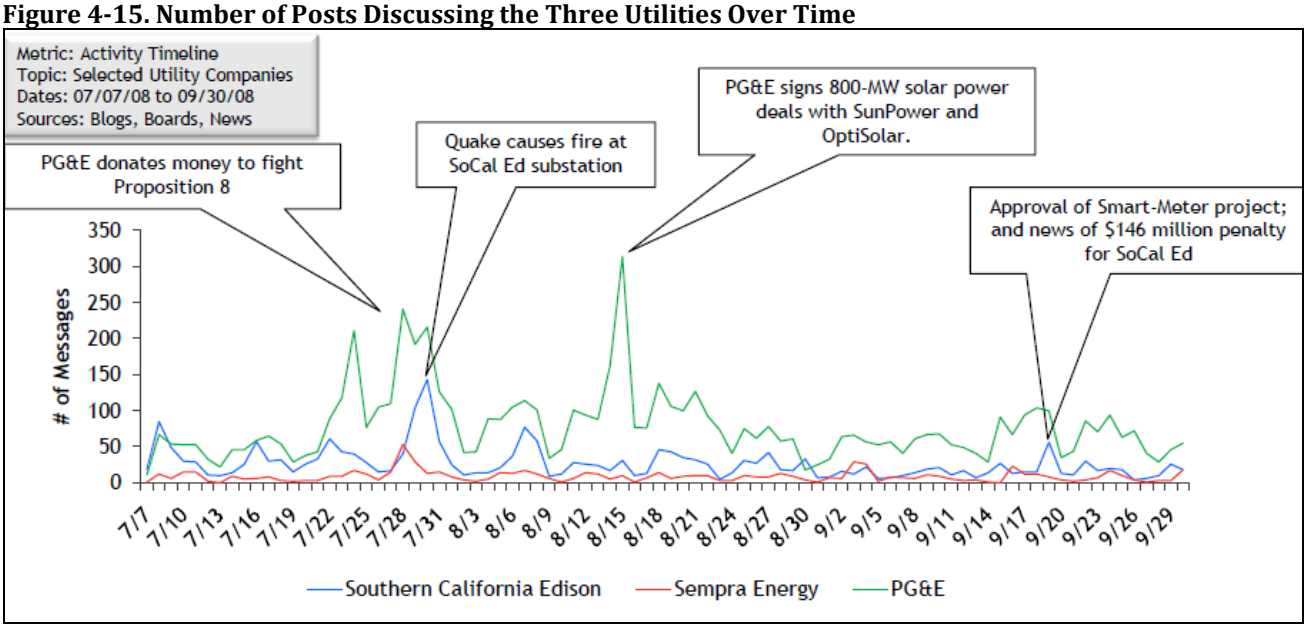


Figure 4-15 below displays the number of posts related to the three utilities between 07/07/2008 to 09/30/2008. PG&E generates a large quantity of online discussion both in news and social media. The largest activity spikes resulted from news announcements and PG&E's opposition to Proposition 8.[13] It is worth noting that discussion about PG&E three times greater than about SCE and six times greater than Sempra.

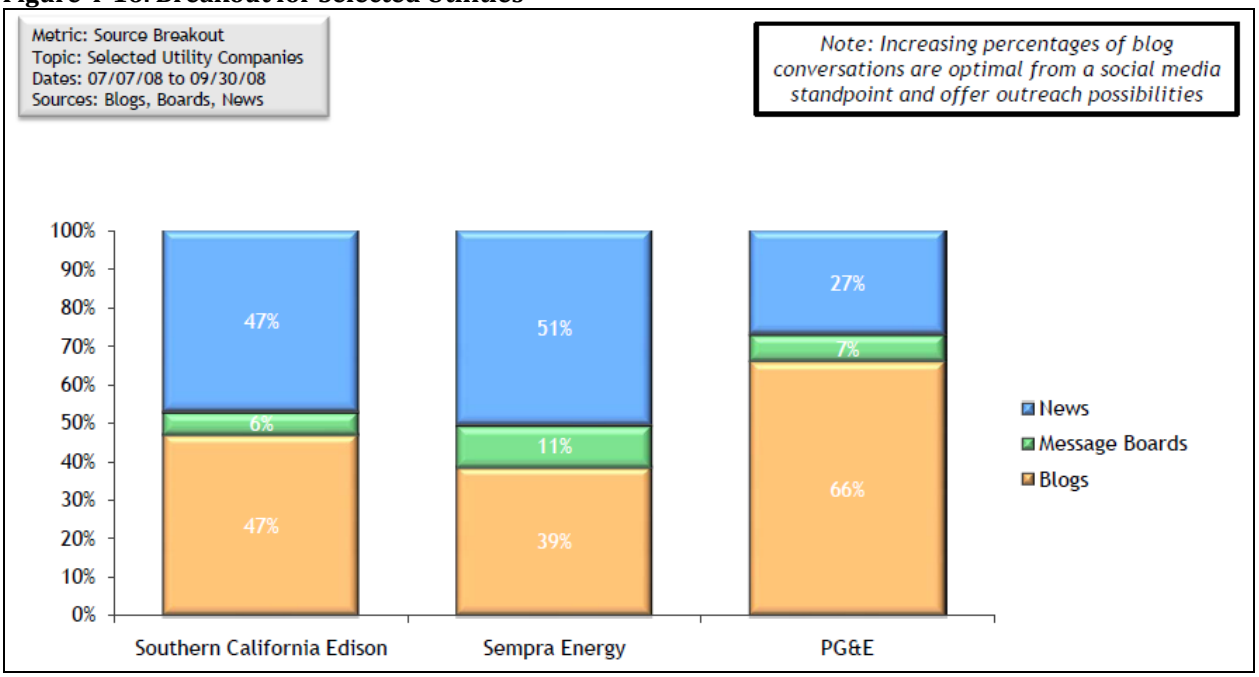
Figure 4-15. Number of Posts Discussing the Three Utilities Over Time



[13] Proposition 8 was a statewide ballot proposition in California regarding a ban on gay marriage. It appeared on the November 4, 2008 ballot.

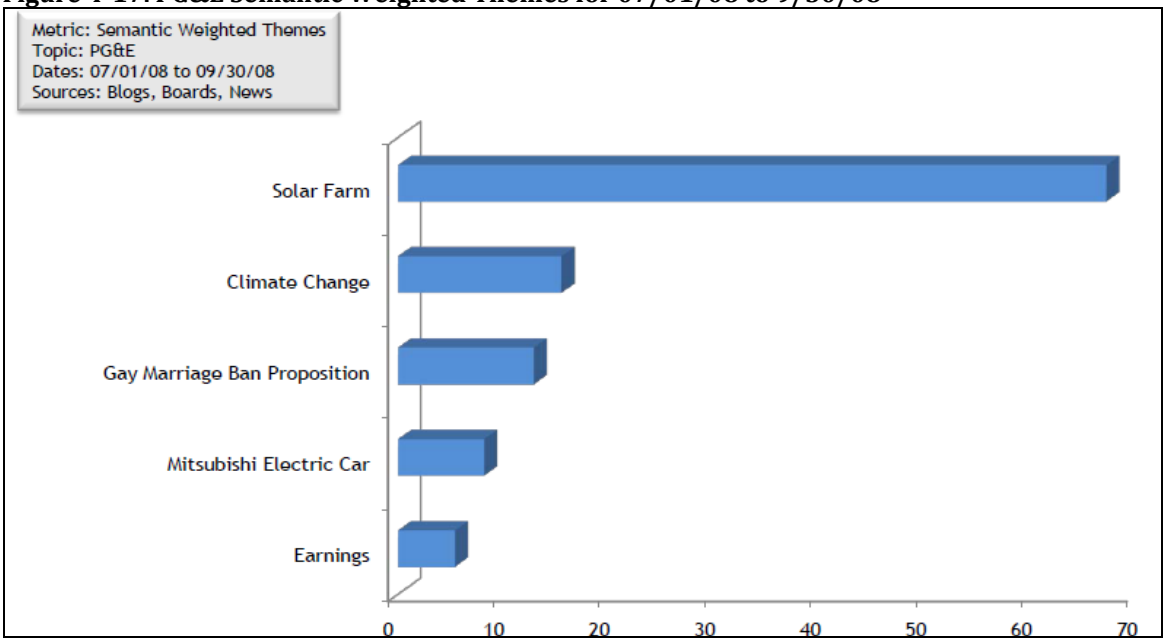
PG&E-related conversations drive a comparatively higher online activity of the group. Notably, two-thirds of PG&E activity occurs within blogs, which indicates consumer generated comments and presents an opportunity to engage at this point of interest (Figure 4-16).

Figure 4-16. Breakout for Selected Utilities



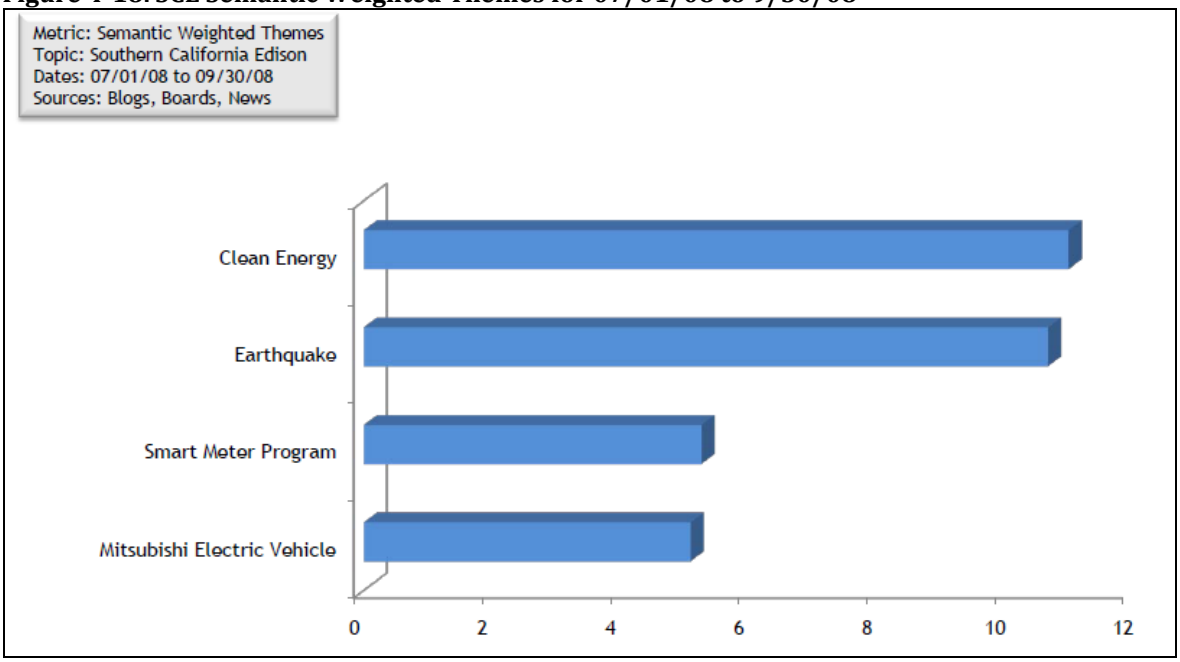
PG&E's OptiSolar Inc./SunPower solar power agreement conversations drove the strongest theme during the three-month period surveyed. Others included talk about PG&E's donation to fight a ban on gay marriage (Proposition 8), and the agreement to test Mitsubishi's electric vehicle (Figure 4-17).

Figure 4-17. PG&E Semantic Weighted Themes for 07/01/08 to 9/30/08



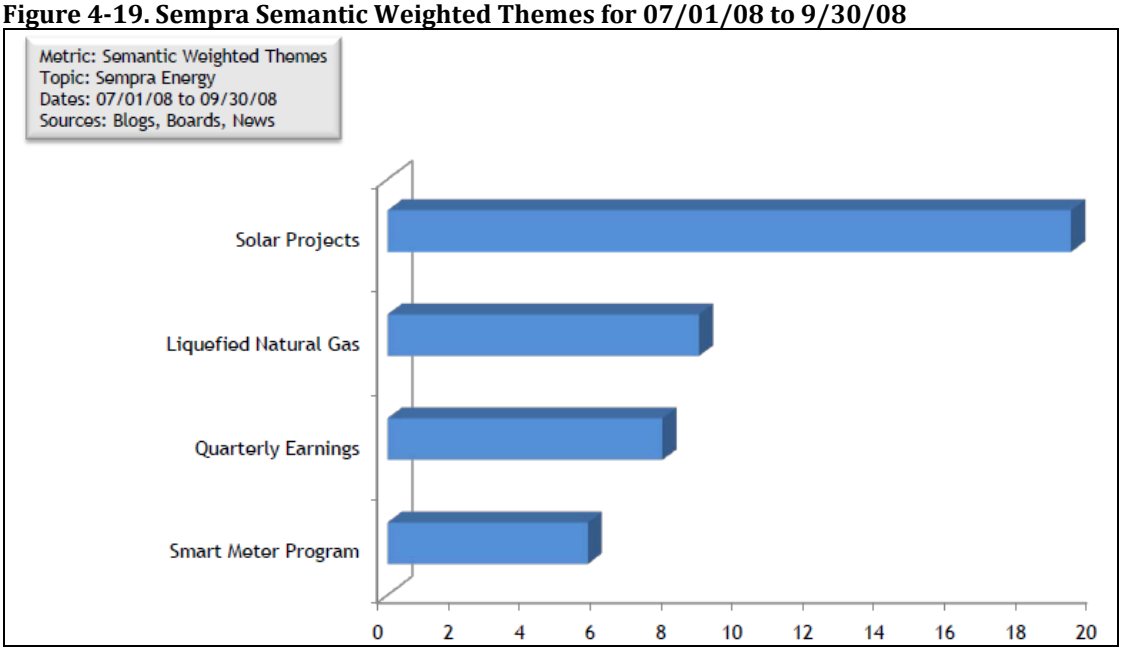
Southern California Edison's commercial solar panel rooftop project drove the strongest theme during the reporting period. Corporate participation in the Smart Meter Program and testing of electric vehicles for Mitsubishi also generated significant online discussion (Figure 4-18).

Figure 4-18. SCE Semantic Weighted Themes for 07/01/08 to 9/30/08



The Sempra/First Solar energy project generated a strong theme for during the reporting period, followed by the LNG terminal inauguration in Mexico, Sempra's quarterly financial results, and the Smart Meter Program (Figure 4-19).

Figure 4-19. Sempra Semantic Weighted Themes for 07/01/08 to 9/30/08



4.4.5 Key Findings and Recommendations from Social Media Analysis

- Online activity before and after the July 8th Flex Alert was very low, especially when splog[14] is removed from the data set. *This kind of rigorous metric reporting allows for more accurate ROI and is recommended going forward.*

- Online activity during the Flex Alert increased dramatically. The sources were, however, mostly news sites or simple re-postings of the alert without much commentary. *This indicates a strong opportunity for engagement with citizen journalists and bloggers to humanize the event, e.g., share their own Flex Alert success story or experience.*

- Activity levels waned quickly after the Flex Alert was over and returned to pre-alert levels. *The campaign has the potential to create and maintain "sustained buzz" through effective conversation and messaging that resonates with the core targets. Engagement tactics should be ongoing, authentic, and value adding, such as online surveys and reward programs.*

- Company-focused blog posts (such as Yahoo's Yodel) highlighting Flex Your Power messaging surfaced in our post analysis*. The continually increasing number of corporate blogs and associated employee readership potential provide an excellent opportunity to reach Californians effectively around this messaging while building corporate sponsorship and education possibilities.*

- During the reporting period, two posts in particular generated lively debates about FYP and energy policy in general. These posts not only mentioned the campaign website and the alert, but also offered opinions that engaged online readers. *This dialogue points to an opportunity around meeting the consumer at the "point of conversation." FYP can participate in this conversation/correct misperceptions/add suggestions, etc.*

- Online activity mentioning Flex Your Power included many non-energy focused blogs, as well as "personal" blogs without any specific topic. *These blogs cluster around certain topics and can drive influencer list generation. Engaging with those authors on the resulting influencer lists provide effective and low cost PR/messaging opportunities.*

- Sentiment was generally positive due to Flex Your Power Awards and mentions of the website as a good resource for energy saving tips. *This positive sentiment indicates a strong foundation for brand and campaign ambassadorship.*

- More than half of all Flex Your Power -related messages occurred in social media. *Blogs and message boards are ideal venues for providing campaign information that can spread virally.*

- Microblog (twitter) activity was not found. *Given the immediacy of the alerts, we believe this will be a key component to spread communication and recommend an analysis of twitter sources for 2009.*

[14] Splog is a term for "spam blogs" or fake blogs set up to distort search engine results and increase traffic to other sites.

5. PROCESS INTERVIEWS WITH IMPLEMENTER AND CAISO

5.1 Interview with Program Implementer

In the 2006-07 report[15] Summit Blue conducted extensive interviews with the program implementer and other IOU stakeholders. In this year's report the team focused on expanding the interview and insights from the CAISO perspective as well as asking follow-up questions designed to understand how the program responded to the prior evaluation's findings and to document changes for the 2008 program. Given that filings are nearing approval for 2009-11, some attention was also paid to the future direction of the program in light of current research findings.

First, the overall timeframe and contracting approach for the Flex Alert campaign was reviewed. This was relevant for several reasons as one research issue identified for this year's evaluation was "how did the program respond to recommendations from the prior evaluation?" As a general matter, the overall campaign was not modified significantly in response to the 2007 evaluation. However, several changes are in store for 2009 and beyond (if approved). It appears that the 2007-2008 Flex Alert campaign was bid with the intention to supply one creative for a two year run. This included basic segmentation research, testing, and discussion of the vignettes in the "PAGette" process where the IOUs provided feedback to the program approach.

Some recommendations were acted upon, such as increasing the emphasis placed on educating inland California residents than in previous years.[16] This increased emphasis responds directly to feedback from the prior evaluation which suggested that more impact might be achieved in this manner. The rationale is that the inland regions of California tend to have higher temperatures than the coastal regions with a correspondingly higher saturation of air conditioners in inland homes. Therefore, the per capita impact from air conditioner turn-down behaviors that can be achieved is somewhat higher in the inland areas than in the coastal region. In our indirect impact analysis Summit Blue grouped California into hot and cold areas, defined by the average high temperature being above or below 90 degrees during the July 2008 Flex Alert (see Section 8). These two categories roughly align with a loose definition of coastal vs. inland areas. The relatively higher awareness of Flex Alerts in inland areas indicates that this emphasis was productive.

In addition, a longstanding point of desired refinement between the IOUs and the implementer appears to have been achieved. In 2009 and beyond it appears that the program's advertising will shift slightly to accommodate the different dates around "summer peak" for each IOU, especially by running later in San Diego. Though this accommodation could not be documented in the SDG&E's demand response application for the 2009-11 program, the intention to accommodate this was noted.

Other areas of feedback from the evaluation team, such as the ability to effectuate the relatively small text messaging component of the campaign, were unfortunately not able to be addressed,

[15] *2006-2007 Flex Your Power NOW! Evaluation Report.* Summit Blue Consulting. May 2008. CALMAC Study ID PGE0255.01.

[16] Note that one of Summit Blue's recommendations in the 2006-2007 evaluation was to geotarget areas with high air conditioning, i.e., the inland areas of the state.

primarily due to a shift in qualified labor. As the campaign intends to focus on a Flex Alert network strategy in 2009 and beyond, this is one area that will need additional attention in the coming year. Other process type improvements that were noted for follow up from the prior year (e.g., CAISO and IOUs linking to the FYP web page or updating IOU DR programs on the Flex Alert web page) were discussed as discussed as something the implementer could work to support but which may ultimately be out of the implementers' control and/or require substantial input/support from those other coordinating entities. Though in general coordination is up this year from past years, there are still several aspects that could be improved somewhat.

Other planning components discussed were the relative advantage that might be achieved with having one utility handle both the energy efficiency (Flex Your Power) and demand response (Flex Alert) contracts in the future. This has the potential to simplify the program overhead and evaluation as well as paperwork burdens resulting from the substantial data requests associated with the Flex Your Power and Flex Alert evaluations. However, one other countervailing consideration is that there is some risk that demand response as a smaller component of the combined media campaign could get relatively short shrift were the programs to be jointly managed and evaluated.

One other relevant point of discussion with regard to implementation strategies included continuing research around the risk of negative exposures stated in the Communication Strategy Analysis section of the 2006-2007 evaluation report. Further research on this issue indicates that the message wear-out risk articulated in the 2006-07 report (pg. 27-28) may have been overstated. The ad frequency cited included the entire ad buy (FYP and FYPN/Flex Alert), thus the exposure to the FYPN/Flex Alert ads was somewhat lower than was reported. Moreover, additional research[17] on this issue indicates that the debate between advertisers on appropriate levels of reach vs. frequency has been going on for the past 30 years and there are no universally agreed-upon rules of thumb on message frequency. For some brands, a single exposure is the appropriate level for frequency. For others, however, more repetition enhances consumers' response. While wear-out can happen, since consumers have more time and exposures to become critical towards the message, it is relevant to consider that this type of message is somewhat different than a product advertisement in that it is an urgent call to action and consumers need to be primed to respond when the Flex Alert is issued. Some ways to address the risk of wear-out are consistent with other evolving multiple segmentation hypotheses (discussed in Section 6.5). For example, message complexity can be increased by presenting new information that again stimulates the consumers to process the message, or by using different messages that appeal to different segments. However, although this strategy has the potential to be effective, it is important to recall that multiple creatives would likely add complexity and cost.

5.2 Interview with CAISO Representative

Summit Blue conducted an interview with Gregg Fishman, a media relations representative at CAISO, to better understand CAISO's role in promoting the Flex Alert and the program's perceived value.

The discussion first centered on CAISO's process for deciding when to call a Flex Alert. CAISO considers numerous factors on both the supply and demand side of the equation, a process described as "as much an art as a science." Generally speaking, forecasts of a long-term heat wave

[17] Brian Sternhal, Kraft Professor of Marketing and the Kellogg School of Management from Northwestern University. "Reach vs. Frequency."

triggers discussion of calling a Flex Alert, as do transmission problems, forced outages at power plants, and wildfires endangering the grid. Both demand and supply forecasts are dynamic and sometimes unpredictable. Heat waves that extend throughout the Western region of the United States can affect the availability of imported electricity from other states, and supply is especially unpredictable in the late summer when hydro levels are diminishing and the older, less reliable power plants may be more likely to break down. These older power plants are the last to be turned on when demand soars, so when record demand is forecast due to a heat wave, CAISO considers it prudent to call a Flex Alert even if it looks as if there is adequate supply to meet the demand, just because an unexpected forced outage at one of these older plants could suddenly throw the state into brownouts or blackouts.

CAISO is extremely cognizant of the risk of appearing to "cry wolf" and call a Flex Alert when one was not needed. The decision to call a Flex Alert is based on predictions that are variable in nature: weather patterns change, people behave differently than expected, supply is more or less available than predicted, etc. CAISO's job is to balance supply and demand for electricity, and while they have some control over supply, they have very little direct control over how much energy is used by homes and businesses. CAISO is in the difficult position in which if voluntary conservation in response to a Flex Alert successfully avoids the need for rolling brownouts, they risk being accused of "crying wolf" because system demand did not reach the forecasted peak levels. Also, due to the need to get the Flex Alert message out to the media and get the Flex Your Power advertisements swapped out, the decision to call a Flex Alert needs to be made early in the preceding day and conditions may have improved by the time that the system was forecasted to peak. As an example of this disconnect, in July 2008, CAISO issued a three-day Flex Alert based on weather forecasts that predicted high temperatures throughout the week. CAISO chose to issue the multi-day Flex Alert in part because of the time lag associated with trading out the advertising spots. When the temperatures did not reach the highs predicted, CAISO considered retracting the Flex Alert but was unable to do so due to the same time lag.

Mr. Fishman believes that the Flex Alert campaign will continue to gain credibility by not using it often and by using positive messaging that reinforces the good that the program does (e.g., the "thank you" press release that CAISO issued after the 2007 Flex Alert). Consumers need to trust that the Flex Alert is called for a real reason; having a tangible reason such as the wildfires assists in this. He believes that putting more information in the hands of the consumer (e.g., residential energy use monitors) will lead to more conservation on Flex Alert days and that the average consumer is fully capable of understanding the concept of peak time conservation if you sit them down and explain the concepts of supply and demand. The key is getting the consumer to pay attention for long enough to explain the concept. He observed that Californians (and Americans in general) are starting to better understand energy issues, that energy is "no longer easy" but something that we do have to think about.

CAISO's relationship with the news media was also discussed. It was observed that turnover in the news media is so high that a great deal of hand-holding of the media is required each year (i.e., the news media is not really gaining "institutional knowledge" of the Flex Alert concept). CAISO does have good working relationships with members of the Sacramento news media and to a lesser extent the Bay Area media. Mr. Fishman thinks that radio is a great medium for the Flex Alert message because the message is less "filtered" when he can simply pick up the phone and be on the air on radio stations across the state; on television, he is sometimes interviewed but more often it's the reporter explaining the Flex Alert and the message can get muddled. Another difficulty in dealing with the media is that while CAISO recognizes the value of letting Californians know that

their efforts made a difference and prevented an emergency, it can be difficult to get the news media to carry that message after the potential for an emergency has passed.

Mr. Fishman indicated that CAISO has not received a request to link to the FYPower.org website from the CAISO website, but agreed that it was a good idea due to the high traffic to the CAISO site especially during heat waves when brownouts are a possibility.

6. FOCUS GROUPS

Summit Blue once again retained Braig Consulting for their expert consumer psychology and marketing qualifications to conduct focus groups in California on August 19-21, 2008, as part of the larger Flex Alert campaign evaluation efforts. Details on the focus group methodology are presented in Section 2.3. This focus group research is a continuation and expansion of the research conducted in the 2007 focus groups, also conducted by Braig Consulting. This section presents the results of the 2008 focus groups.

6.1 Focus Groups Objectives

Braig Consulting conducted six focus groups with California residents as part of the evaluation plan for the Flex Alert campaign. The overarching goal of the research was to gather a broad range of qualitative reactions to the Flex Alert advertisements from 2008. Specific objectives included:

1. Qualitatively assess awareness of and associations with Flex Alert and Flex Your Power logos and programs.

2. Examine message comprehension and reactions to the Flex Alert and Reminder/Thank You ads.

3. Probe specifically to understand consumer beliefs about benefits and consequences of choosing to respond or not respond to the message advocacy. Also explore the perceived timeframe of the message.

4. Gain insight into possible segmentation variables to group consumers by response drivers and attitudes.

6.2 Top-line Findings

1. Compared to the near 100% awareness of both the Flex Alert and Flex Your Power logos in 2007, respondents in 2008 had only a vague passing familiarity with the logos. Most believed they came from their local utility, but had little to no underlying understanding of what the logos signified or any program linked to them. This shift could signal a media issue – perhaps broadcast media hit major DMAs more than the smaller ones in the current year's research. Alternatively, it could be the case that applying the "Flex" brand to so many logos, initiatives, and marketing collateral has diluted its meaning.

2. Consumers advised that the messages incorporate more "relatable" scenarios and information in order to increase the likelihood of inducing action. Make the message relatable was a clear mantra not heard last year. People argued that relatability can be increased using either a negative or a positive frame.

    - Positive Frame: Show little things that matter without hardship. This makes the request feel doable.

- Negative Frame: Show consequences of not doing what is asked. Make it hurt by showing concrete consequences to the individual.

- We believe the desire expressed for relatability may stem from the respondents this year representing a different segment of consumers than last year. Apparently, the less environmentally conscious require more vivid ways of personalizing the Flex Alert request, since the more global appeal did not directly connect well with them.

3. The primary take-away from both the Flex Alert and the Reminder/Thank You ad was generally to save energy and conserve. Consistent with last year's findings, the immediate *and finite* timeframe is not getting across well in the Flex Alert.

4. Many respondents felt the purpose of the Reminder message was to increase consciousness and self-analysis. Being conscious makes energy use something deliberately thought about vs. just rote, unthinking habitual actions. Some felt this would prompt them to examine their behaviors and put thought into energy use decisions and behaviors, and would perhaps extend this consciousness to water, gas, and other spending habits.

    - *"It brings awareness back into energy usage."* – San Diego renter

5. Quantification is strongly desired across all respondents. In the ideal world, consumers want to see documented incremental penny savings for their individual conservation actions. However, most acknowledge that this is not possible. As a result, they would be satisfied with knowing the amount of money/energy California saved on a given Flex Alert day. Alternatively, some argued that the message should cast the desired actions as a benchmark. Compare own behaviors to the benchmark.

    - *"If 78 degrees is the ideal, I still went from 72 to 76 – it's something."* – San Diego renter

    - *"Make it measurable. Explain how watts are saved with each thing or have a way of visually showing how energy is being wasted, and put it in terms we can relate to."* – Irvine homeowner

    - They want their choices explained and to understand what power-using devices are equivalent – e.g., running a load of laundry = cooling a room of Y by Z dimensions, or a microwave a dinner = X # hours of TV. This way tradeoffs can be assessed.

6. Using community notions to spur participation is powerful, but has to be more about being in this together than specifically invoking "pride." Communal efforts imply that everyone is doing their bit and sacrifice is being spread around, which is different from pride. People want to know that they aren't the only ones doing something, that their fellow community members (including businesses) are all doing their part. A local community feel makes the requested actions also feel more doable and makes impacting global warming a more concrete and believable claim.

    - *"Global warming is overwhelming to people. The majority of people don't know what to do because it's way beyond them. We get frustrated with the discussions of global warming globally because it is such an enormous issue and enormous problem. This ad gives me something to do – locally. This is where I can make a difference. And, I have to*

believe there are a lot of little me's out there, so it could add up to something." – Irvine renter

- *"Knowing we're all involved. That's good!"* – Irvine homeowner

7. Very few, if any, understand how electricity is produced or how its supply works. There is some sense of grids being connected, but the deeper understanding was far thinner than the previous year's research which was conducted in the three largest cities in California. Respondents lacked the knowledge to link how electric power is created with global warming. This is part of why it was such a disconnect for most people to have short-term blackouts and long-term global warming in the same message. Not all want more information, but in general, the more educated and affluent folks do have some curiosity about the subject.

8. There is definitely an opportunity beyond preaching to the choir. Respondents overall believed the ads were for converting people, not preaching to the already green choir. Given the objectives of the Flex Alert campaign, it is worth exploring a true segmentation strategy with different appeals and possibly media buys for each identified segment of interest. The converts likely represent greater impact in terms of temporary load reduction than the choir who generally believe they are already doing all they can.

9. Text message alerts have definite merit as a medium to communicate the alerts.

    - *"It's inventive. And, it helps show how urgent the situation is."* – Fresno homeowner

    - *"You should capitalize on the trend of forwarding messages to friends."* – Fresno renter

    Texts are instantaneous so the message could hit at the appropriate time to maximize load reduction at 4PM. However, it is unlikely people will go to fypower.org to sign up for the alerts unless advertising is used along with a nominal incentive to encourage participation.

6.3 Flex Alert Awareness and Knowledge

Overall, unaided discussions of conservation programs all focused on their local utility company. The most common top-of-mind programs included bill-insert communications on AC cycling programs, appliance rebates for energy-efficient replacements, and for the lower-income renter groups, some awareness of HEAP, CARE, and other payment assistance programs.

Energy Star also came up by name in almost every discussion. Several referenced the stickers as helping generate the knowledge and awareness. Interestingly, UCSD conference rooms had the Flex Your Power sticker above light switches. A few respondents who worked there associated Flex Your Power with turning off unused lights as a result. Stickers are a potentially interesting idea to pursue as a means for linking a program with intended behaviors.

Unaided, respondents named virtually no other program using a specific "brand" name, offering descriptions only.

- *"They sent me $25 to sign up for something that takes over your thermostat. I pay enough so you need to let me control my own things!"* – Fresno homeowner

- *"The ads say to unplug everything you're not using."* – Fresno renters

- *"There is a summer saver. It has multiple plans you can do."* – Irvine homeowners

- *"I think there are radio ads for an appliance buy back program."* – San Diego renters

The upbeat news is that in at least two of the six groups, one of the descriptions given was for the Flex Alert campaign.

- *"The Turn if Off ads – you're supposed to flip the switch, keep your thermostat set, and use your appliances at certain times*." – Fresno renters

- *"When the Flex Alert ad comes on TV, you have to tone down your appliance use or even not use." – Irvine renter (in response to being shown the Flex Alert logo)*

Compared to the near 100% awareness of both the Flex Alert and Flex Your Power in 2007, respondents in 2008 had only a vague passing familiarity with the logos. Most believed they came from their local utility, but had little to no underlying understanding of what the logos signified or any program linked to them. For most, they were more familiar with the words "Flex Your Power" than the logo itself. There was a sense that Flex Your Power appeared in radio ads and other places and contexts. As with the described conservation programs, most also believed that the "Flex" brand came from their local utility or perhaps the state.

6.4 Reactions to 2008 Ads

Two ads were shown in all groups – the 2008 Flex Alert and the 2008 Reminder/Thank you. We counterbalanced the two ads across cities and across homeowners/renters. This allowed us to get a clean read on each ad at least three times and at least once with homeowners vs. renters in each city. As with all focus-group testing of advertising stimuli, the environment naturally increases the cognitive attention devoted to processing the message. However, the goal was to have rich discussions on the basis of their reactions to the ads, so the additional attention actually facilitated rather than detracted from the conversations.

6.4.1 Alert Ad

Message Comprehension. As noted previously, the primary take-away from the message was basic conservation and energy saving actions that should be done at certain times of the day. When pressed about what the message wanted them to do, all played back the three requested actions. Most of the actions felt familiar to them and were common sense and reasonable. However, there was far more pushback in discussion on changing the air conditioning thermostat. The level of inconvenience and discomfort associated with a warmer house was more than many were willing to contemplate.

- *"I work long days, and can really only sleep 6 hours a night. I need it to be cool so I'm comfortable."* – San Diego renter

The dual statements of preventing blackouts today and global warming tomorrow were confusing to people. The relationship between the two did not make sense to most.

- *"Global warming is long-term. Rolling blackouts are short-term. You can't have a short-term solution to a long-term problem like this. You can't have it both ways. You can't just do a part, do things halfway. Either you conserve or you don't. This just seems contradictory the way they are saying it."* – Fresno homeowner

- *"It started with the right now, emergency perspective, but it ended with a philosophical stance on global warming that feels more ambiguous."* – San Diego homeowner

- *"It offers a sequence of steps, different things you should do to avoid rolling blackouts. Global warming is sort tacked on the end. I don't see how the message relates to global warming."* – Fresno homeowner

The combination of the blackout and global warming statements also made it more challenging to discern the relevant timeframe even though most grasped that there was a more urgent tone to the Alert message in comparison to the Reminder message.

Benefits and Consequences. Based on the message, the primary perceived benefit was preventing blackouts. Because of news coverage and more publicized aspects of the effects of blackouts on the elderly and other vulnerable populations, blackouts are attention-getting. This is true even if people had not personally experienced a blackout. However, for those who had lived through a blackout, rolling or otherwise, avoiding going through a blackout again was a motivator to pay attention to the message and perhaps do at least some of the things the message requested.

- *"They're scary! We had no candles in the house. We stood outside under a street lamp. You don't know how long it will last."* – Fresno renter

- *"I've dealt with them before. They're a total inconvenience. It's hot. You can't do your work. Food spoils. Old people are put at risk."* – Irvine renter

The blackout language did make the Flex Alert feel more immediate. Global warming then confused things, but it was clear that the Alert implied the "right now." However, respondents felt the "right now" could mean this moment, this week, or this summer season because there was no time duration given.

- *"This is an alert and it seems urgent, but there isn't a sense of the time duration. It feels to me like the alert refers to the entire summer season, not a single day."* – Irvine owner
- *"This is moment in time, but we need to keep going."* – Fresno owner
- *"The timeframe is from now until forever."* – San Diego owner

If blackouts and global warming continue to be used in the same message, it is important to get more specific about times in order to see a more direct impact on load reduction during the desired time of day. The phrase "state has issued" is helpful in conveying the immediacy and urgency, but still lacks timing clarity. While it is clear that there are significant timing and media-buying challenges to the Flex Alert campaign, at least adding words like "for today" or "for the next 24 hours" or "all day tomorrow" to tighten the time-sensitive goal of the Flex Alert.

Since avoiding blackouts is the most prominent benefit, it stands to reason that contending with the aftermath of blackouts is the most significant consequence. Without making the consequences tangible, however, many were somewhat indifferent to this as a possible result. Consumers appear to know whether they are in a neighborhood that can be cycled through rolling blackouts. We did not ask the question specifically, but it appeared that over half of our respondents lived close

enough to a fire station, police station, or hospital so they would personally be unaffected by rolling blackouts. While they sympathized with the plight of others, people argued that unless the effects were made more real than simply text on a screen, avoiding blackouts was not a universal motivator to fully take on the requested energy-saving behaviors. That said, consumers believed that invoking the vulnerable populations who could be affected in a more vivid way would stir local community responsibility to make people act.

6.4.2 Reminder / Thank-You Ad

Message Comprehension. In comparison to the Alert message, there was no specificity attached to when energy conserving behaviors should be done. "It's just a general energy conservation message" was the most common reaction to the ad.

People argued that the purpose of the ad was to generate consciousness around energy use, making energy-related decisions more top of mind.

- *"Just be conscious about your energy usage. Turn off lights in other rooms if you're not using them. Save what you can, and look for other ways you can save. Just be conscious about what you're doing."* – Irvine homeowner

- *"Be conscious of your energy use. Save what you can. Small stuff to add to the mix of behaviors already doing."* – Irvine homeowners

This was a new reaction to the ads compared to the research done last summer. It appears that for those who are somewhat less environmentally aware, there is value in calling their behavior into question – not criticizing, but just asking for self-reflection.

Once this heightened consciousness was put into place, people generally reacted in one of two ways. Some began rolling their eyes at the global warming portion of the message. Their read of the ad was that people should conserve to reduce global warming, and there was definite evidence of global warming fatigue and even outright skepticism.

- *"I don't believe in global warming."* – San Diego homeowner

- *"There's no such thing as global warming. It's just part of a natural cycle."* – Irvine homeowner

While they wanted to be good citizens and perhaps do some things to help vulnerable people avoid blackouts, the Reminder ad felt too general, and global warming lacked much of a motivating punch. Without making global warming feel concrete and real, it is more of a philosophy than a phenomenon that people can touch, feel, and observe. And, without that realness to global warming, it is difficult for the less environmentally aware to grasp or believe that there are actions in their daily lives that can do anything.

The second reaction on the basis of heightened awareness was more constructive for the Flex Alert campaign. Our research design uncovered a segment of consumers who were interested in and happy for the information and reminder to make energy decisions more consciously.

- *"These are new things to me. I'm going to start unplugging everything now. This is new information to me." – Fresno renter*

- *"It gives people the idea to do things to save energy. It makes you pay attention to other places you spend money like your gas bill. Makes you aware of where your money and energy are going."* – *Fresno renter*

As we will discuss, we believe there is potential in exploring a segmentation strategy to enhance the impact of the Flex Alert campaign. The lower income/less educated segment in Fresno was more receptive to energy- and money-saving information. They were also more likely to state that they would comply with the alert "because you told us we had to."

The final piece of the Reminder message that came through was that Californians were being thanked for the energy conservation actions they took. The positive take on this was being appreciative of being acknowledged.

- *"I liked being thanked. It felt like my part worked. It did something, and there were positive consequences"* – Fresno owner

As noted already, it is difficult for the individual consumer to recognize much of an effect of his or her actions other than analyzing their utility bill for cost savings. Being thanked is at least a first step in convincing people that individual actions matter.

However, the lack of specificity of the actions for which they were being thanked was problematic.

- *"It looks like I got thanked for something I didn't do."* – Irvine renter once we viewed the Alert to identify the energy saving actions

- *"You need to thank the people who stepped up to the cause. So, you have to be specific about why they're being thanked so I know if I did that action, I'm the one being thanked."* – Irvine renter

It is worth testing whether dropping or reducing the global warming aspect of the message and incorporating the three Alert behaviors would increase clarity around why people are being thanked. Further, in the continued spirit of making an empirical and measurable connection between individual actions and tangible benefits, consumers wondered if statistics could be added. They want to know how much the load was decreased—measured in kilowatts, dollars, or number of blackouts avoided. Assuming the text-based message format is continued, inserting this sentence may not be cost prohibitive.

Benefits and Consequences. The benefits of the Reminder ad are necessarily more vague given that the objective is to thank as well as remind. Consumers reported a general sense that somehow California is better off as a result of energy savings and long-term changes to mindset and behavior. However, there was no real bite to the request to save energy, and the name 'Flex Alert' implied that conserving was optional.

Both educated and less educated consumers all wanted to know the relationship between behaviors and cost savings. Practically speaking, rate schedules are likely too complicated to create the simple grid consumers want. However, it is worth testing consumer reactions to different data formats that do illustrate cost savings in pennies associated with different behaviors. Most do understand that individual behaviors are measured in cents, but by demonstrating frequencies of these behaviors, it could be shown graphically how pennies readily turn into dollars.

The other illustration of incremental impact of individual behaviors worth exploring is how daily household actions build to create state-level energy savings that do help reduce effects of global warming. Even the global warming naysayers appreciate that using less energy is a good thing. Making energy savings more concrete at the level of daily lives is a promising avenue to explore to make the benefit in the Reminder ad more compelling.

The less urgent and more general tone of the ad implied a permanent change in lifestyle to most people. The understanding was that people should seek to change their behavior forever as a result of examining their energy use and making appropriate changes. The general take was that "we should conserve always, but especially during emergencies."

6.4.3 Understanding of Peak

Even though the Alert ad specifically references 7PM, there is still huge variance in comprehension of this term. Very few played back how peak is defined by the PUC/CAISO. Best guesses included:

- *"Business time so 9-5 or 8-6."*
- *"After work from about 5-7ish."*
- *"I think during the day around lunch time when it's really hot out."*

6.4.4 Text-based Format and Voiceover of the Ad

There was some concern that the text-based format of the ad might cause people to confuse it with a news report. At least under focus group viewing conditions, this was not the case. We did have respondents discuss the pros and cons of the creative format of primarily text with voiceover and sound effects only.

The Alert ad was more likely than the Reminder ad to garner attention and break through ad clutter. However, most said neither ad would survive the fast forward button if they were watching TV shows from their DVR.

The directness and simplicity were generally valued and it carried the appropriate seriousness for both the Alert and Reminder/Thank You messages.

The voice was monotone to some. However, most liked that he was urgent sounding but not over the top inducing panic.

Lack of any visuals though was a missed opportunity to help use them to fill in the gaps in message comprehension. As noted several times already, making things concrete is important to illustrate both benefits and consequences and overcome barriers to participation. While cost may be a factor in the creation of the ads, it is perhaps worth considering even some stock photo images to use behind the text to supplement the voiceover.

A couple entertaining but surprisingly constructive voiceover suggestions were offered: James Earl Jones or John O'Hurley[18].

[18] John O'Hurley is an actor best known for his role as J. Peterman on *Seinfeld*.

6.4.5 The Name Flex Alert

Most truly felt that 'Flex Alert' is too soft. It felt optional and suggestive rather than more of an urgent command. While no one wanted to be commanded to comply, they did suggest that a stronger, more forceful name would help carry the urgency and also perhaps help clarify the timeframe misperceptions.

Right now, the word 'issued', the color red, and the anxious phone-ringing sound effects are what are making the Alert feel urgent.

Suggested words to consider using to construct a more compelling program name include:

- Warning
- Emergency
- Energy alert
- Power grid alert

We are aware that there are good reasons, political and otherwise, for why Flex Alert is the program name and will likely remain the name. However, at some point it may be worth the brave move of exploring non-Flex name options. Given how infrequently the alerts are actually issued, using the Flex language that is used so commonly in light switch stickers, bill inserts, radio ads, etc. may actually be undermining the ability of the ad to induce immediate action.

6.4.6 Other Language Insights

"The right way"

- A highly polarizing phrase
- Some liked the appeal to community and ethical spirit, but "the right thing to do" better captured this sentiment.
- However, others found it guilt inducing and condescending.

"Threaten our state"

- Over the top for just about everyone
- Felt it was a blatant scare tactic
- The implied drama and hyperbole also made it feel more political. Of all the words explored in greater detail, this one triggered comments about utilities not doing their job properly the most frequently.

"Just a little bit more of what you normally do"

- The phrase came from one of the open-ended responses in the post-event survey.
- Worked well in appealing to those who are already highly environmentally aware and regularly engaging in conservation behaviors
- It also made the request feel more doable and reasonable.

"Big drain" and "time to act"

- Both are great phrases to help convey urgency.
- Both were also singled out as quite vivid.
- Implies an action and justifies the "now" aspect of the Alert
- Implies that you need to contribute to stop this

6.5 Segmentation Hypotheses

The research design was intended to help explore possible segmentation variables of interest. All ideas included here regarding differential consumer segments are exploratory only at this stage. However, we believe all ideas are worth further examination using more generalizable techniques such as surveys in order to provide greater confidence in the size, attitudes, and likely behaviors of the segments before pursuing differential program messages to reach each segment.

The impetus for exploring possible segments stemmed from the 2007 focus group findings. The 2007 evaluation revealed that the higher educated, environmentally aware group typically used in research and to which media buys are frequently aimed feels they are tapped out. There is a strong belief that they are already doing all they can to save energy. Hence, it made sense to examine whether other segments exist who are receptive to conserving but who have not fully adopted energy-saving behaviors as part of their daily lives.

The hypothesized segmentation scheme contains three groups.

- The Choir
- The Reluctant Converts
- The Financially Driven Converts

Each group has core beliefs and attitudes that drive the most compelling message and tactics to prompt compliance with the behaviors requested in Flex Alerts, summarized in Table 6-1 and discussed in more detail below.

Table 6-1. Summary of Hypothesized Segmentation Scheme

	The Choir	**Reluctant Converts**	**Financially Driven Converts**
Geographic Region	San Diego	Irvine	Fresno
Key Message	Do a little more of what you are already doing	Even business and governments are doing their part to prevent blackouts	Cost savings over time and at the state level
Motivations	Already appreciate the seriousness of the alerts	Need to overcome resentment, make the seriousness concrete by providing data	Most likely to comply "because you told us to"

For additional context regarding focus group participants' energy consumption, please refer to Appendix K: Focus Group Participants' Consumption. Qualitative details are provided which document the relatively greater energy intensity of the Irvine participants as compared to San Diego participants.

6.5.1 The Choir

Attitudinally these are the environmentally educated and aware who let their beliefs drive their behaviors. Reaching the Choir is an easier sell in terms of buy-in. They appreciate the seriousness of alerts, generally believe it is a true emergency, and there is a fit with their own environmental passions.

However, as we learned in last year's focus groups and has been supported in other survey work, this segment feels maxed out around requests to do more. For a measurable portion of them, setting thermostats to 78 is standard practice, which means they do not represent an opportunity for significant load reduction even if they are exposed to the Flex Alert and are in an opportunity to act.

In messaging to them, incorporating language that requests them to do a little bit more of what they're already doing may provide incremental load reduction.

6.5.2 The Reluctant Converts

The consumers we met in Irvine/Orange County fell into this group. They were generally more politically conservative than their equally educated Choir counterparts. While they do not mind being good California citizens, we heard evidence of resentment over being asked to sacrifice when others are not. They typically singled out businesses and government as not doing their fair share and creating an undue burden on individuals/households as a result. This segment is also more likely to be suspicious of utility companies and more likely to blame utilities for power problems.

Messaging to this group must emphasize that the energy-saving behaviors are being requested of everybody, including businesses. Reassuring them that the entire state is in this together should help overcome the reluctance. Reminding of the consequences of blackouts to vulnerable populations and making global warming feel more concrete by providing cumulative evidence of household actions will also likely be persuasive. Moved more by data than compassion, empirical proof will be important.

6.5.3 The Financially Driven Converts

The respondents in Fresno were clearly lower income than the other two cities. A household maximum, not minimum, was imposed for renters, so we had some people in the group who did occasionally qualify for bill pay assistance. Further, even though the homeowner group should have had a $75,000 minimum, some respondents appeared to have inflated their income figure. As a result, we feel we met another potential segment.

The lower income/lower education segment was the only one relatively new to the energy conservation concept. The actions outlined in the Alert were new to them as were some of the ideas that came out of discussion such as unplugging various phone, camera, and other chargers and turning off unused appliances. All left the discussion having learned of behaviors they had not thought of before.

This group had the following general attitudes that could make them an attractive target for Flex Alerts:

- Overall, they seemed more compliant. When asked why they would comply with the actions outlined in the Flex Alert, they said, "because you asked us to" and "because you said it was an emergency so we have to."

- They were more sympathetic to both businesses and the elderly. *"For home users it's not a big deal. We can do a lot of things earlier or later if we have to. But, businesses have to do things during the day. They can't do much about their usage. So, we have to do more as homeowners."* – Fresno renters

Key to messaging for this group is to have some evidence generally of cost savings over time. The more compliant attitude also suggests that adding "emergency" to the language will also increase the likelihood they will participate in load reduction actions at the appropriate times.

6.6 Recommendations from Focus Groups

To summarize, the focus group findings suggest the following recommendations:

- Shore up the short-term urgency timing of the Alert. The timeline must be specified outright and the exact times for what constitutes peak must be given. Eliminate the ambiguity in the Alerts.

- Continue to leverage the blackout language, which clearly points to urgency, is motivating for those who have endured them, and strikes a "help a neighbor out" empathy chord for those who have not.

- Jettison the global warming language in the alert, but okay to retain in the Reminder/Thank You.

- Explore ways of incorporating a mix of personally relatable consequences and proactive positive behaviors. A desire for the benefits and consequences to feel more concrete rang true across all hypothesized segments.

- Consider renaming Flex Alert. It is important to continue to be open to developing the best way of getting the Alert message across. The Save Energy Now tagline should also be revisited. The language of the tagline should convey immediacy and suggest a command.

- Segmentation strategies should be studied further.

- Finally, pursue the text message opportunity by using advertising to spur sign up.

    - Explore incentives (e.g., CFL lightbulb package, $5-10 rebate on bill) to encourage signups.

    - Consider using the text message alert as part of an "influence the influencer" tactic. By getting kids/teens to sign up, they are in a position to influence their parents' behavior. Kids bring in social norms around reduce, reuse, recycle, and community projects to parents of the Convert segments in particular. They are also more receptive to viral tactics such as text messaging, and many also arrive home from school at about the time of maximal impact of thermostat adjustment on load.

7. POST-EVENT SURVEY RESULTS ON CUSTOMER AWARENESS AND RESPONSE

As soon as the July 8-10, 2008 Flex Alert was announced, Summit Blue began work with the telephone survey house, Population Research Systems (PRS), to conduct a post-event survey. The survey was fielded between July 10th and July 21st and obtained 1230 completes. This section summarizes the results of the post-event survey effort.

Where appropriate, comparisons to the post-event survey conducted in August/September 2007 are made. The post-event survey instrument used in 2007 was revised and expanded in 2008 to incorporate lessons learned during the 2007 evaluation and to address comments received from DRMEC committee members. The primary changes to the 2008 survey instrument were to add questions on conservation actions and home characteristics, which will provide greater detail and enhance the accuracy of the impact analysis using the survey results. The 2008 post-event survey instrument appears in Appendix A.

The sampling plan used for the 2008 post-event survey was modified from that used in the 2007 survey efforts; larger quotas were assigned to those designated media areas (DMAs) that accounted for the largest shares of air conditioning units in the state, to enhance the accuracy of the impact analysis. This resulted in smaller sample sizes for the smaller DMAs that do not have particularly high saturations of air conditioners (i.e., Bakersfield, Chico, Monterey, and Santa Barbara), which makes it difficult to produce statistically significant comparisons among the smaller DMAs. However, the new sampling plan does better reflect the population of the state as a whole. See Section 2.2 for more details on the survey sample.

Throughout this section, various metrics of message/alert recall and behaviors taken in response to the Flex Alert are broken out by geographic, demographic, and psychographic characteristics. These cross-tabulations look for statistically significant relationships that may shed light on what characteristics make an individual more willing and/or able to conserve electricity in response to an alert, and also identify if certain segments of the population are not being reached with the energy conservation message. For instance, respondents who hold pro-environmental opinions (e.g., agreement with the statement that "global warming is an important environmental problem") might be predisposed towards taking conservation actions. Whenever these comparisons are made, chi-square statistics will be presented to identify if the relationship among the tested variables is statistically significant at the 90% confidence level.

7.1 Unaided Recall of Energy-Related Behaviors

One-quarter of all respondents reported doing *something* to change—but not necessarily reduce—their electricity consumption in the past ten days. Some of these respondents mentioned using more air conditioning (not a conservation action) or making a permanent energy efficiency upgrade such as installing more efficient appliances or CFLs (which is good, but not the desired outcome of the Flex Alert campaign). After removing those who only made permanent efficiency upgrades or

actually used more electricity, approximately 22% of all respondents took some kind of energy conservation action in the past ten days.[19] Table 7-1 summarizes the actions taken by respondents.

Table 7-1. Actions Taken to Change Electricity Consumption

	% of Those Respondents Who Said They Did Something	% of All Respondents
Set thermostat to 78 degrees or higher	32%	8%
Turn off unneeded lights	32%	8%
Turn off air conditioner altogether	20%	5%
Use appliances after 7 PM	22%	6%
Don't use appliances	13%	3%
Used fans/swamp cooler	6%	2%
Used TV/computer/stereo less	3%	0.8%
Shut off pool pump	1%	0.3%
Unplugged appliances or electronics	3%	0.7%
Went to a public area that provides AC	0.6%	0.2%
Other*	9%	2%
Made permanent energy efficiency upgrade (e.g., installed CFLs or more efficient appliances)	*7%*	*2%*
Used A/C more	*10%*	*2%*
Note: respondents could provide more than one response. * "Other" responses included less common actions such as "unplugged soda machine," "cut showering time," etc.		

Table 7-2 explores whether respondents in different DMAs had varying levels of self-reported conservation actions. While most of the differences are not statistically significant, a few significant comparisons can be made; most notably, Sacramento had higher levels of conservation than San Diego.

[19] In Summit Blue's 2007 post-event survey, the same percentage (22%) indicated that they took at least one energy-conservation action.

Table 7-2. Respondents Who Reported Reducing Electricity Consumption – by DMA and DMA Size

	% of Respondents	Confidence Interval @ 90%
Large DMAs	**22%**	**20% - 24%**
Sacramento	29%	23% - 35%
Los Angeles	23%	20% - 26%
San Francisco	18%	18% - 23%
San Diego	17%	12% - 22%
Smaller DMAs	**23%**	**19% - 27%**
Palm Springs	29%	21% - 37%
Bakersfield	24%	13% - 35%
Fresno	23%	16% - 30%
Monterey	19%	7% - 31%
Santa Barbara	18%	7% - 29%
Chico	15%	4% - 26%
Total	**22%**	**20% - 24%**
Statistics (Large vs. Small Comparison) Chi-Square, df, Asymp. Sig.[20]	*.305, 1, .581*	
Note: the large DMA vs. small DMA comparison is not statistically significant at the 90% level. Individual DMA comparisons can be made by comparing the confidence intervals; if two particular DMAs' confidence intervals overlap, the difference between the two DMAs is *not* statistically significant.		

While the difference between large DMAs and small DMAs was not statistically significant, when examining the levels of conservation by regional weather conditions during the Flex Alert, there were significant differences. Summit Blue looked at the high temperatures over the three-day Flex Alert period for representative cities in each climate zone and found a clear division between climate zones that had average high temperatures of 90 degrees or higher and those that had average high temperatures lower than 90 degrees (mainly in the 70-80 degree range).[21] Respondents located in areas where the average high temperature was 90 degrees or higher over the three-day Flex Alert period were significantly more likely to report conserving electricity than those located in regions where the average high temperature was less than 90 degrees (Table 7-3).

[20] A note on statistics used: any time the "asymp. sig." statistic is *under* 0.10, the difference is statistically significant at the 90% level. In some cases the statistics are presented in footnotes as: (chi-square, df, Asymp. Sig.).

[21] For Summit Blue's purposes in this report, climate zones designated as "high temperatures" are climate zones 2, 4, and 10-16; climate zones designated as "lower temperatures" are 1, 3, and 5-9. Each survey respondent was assigned a climate zone based on their zip code. A map of California's climate zones can be found in Appendix B.

Table 7-3. Respondents Who Reported Reducing Electricity Consumption – by Climate

	% of Respondents	Confidence Interval @ 90%
Higher average temperatures (90 degrees or higher)	26%	24% - 29%
Lower average temperatures (lower than 90 degrees)	17%	14% - 19%
Total	**22%**	**20% - 24%**
Statistics (Large vs. Small Comparison) Chi-Square, df, Asymp. Sig.	*16.414, 2, .000*	
Note: the higher vs. lower average temperatures comparison is statistically significant at the 90% level.		

Respondents provided a variety of reasons for changing their normal electricity usage. The most common reasons had to do with saving money and keeping utility bills under control. This likely explains why conservation was more common amongst respondents who were located in the hotter regions of California (their air conditioners were working overtime and they worried about the bills). A few representative statements include:

"Our electric bill would be pretty high if we didn't."

"Because the price on electricity is a lot now so trying to save."

"Mainly because of the electrical cost, I don't like them high flying bills, and our house is pretty cool until it gets over 100 degrees, then we wait till about 5 PM to turn the air on."

"Scared about the electric bills, and trying everything you can to be green."

Five respondents specifically mentioned the Flex Alert by name, and a number of other respondents mentioned that they had seen on the TV that conservation was needed or that they were concerned about blackouts. Many of these types of reasons included a variation on "I wanted to do my part." A few representative statements include:

"Just did a little bit more of what I normally do. Conservation is everyone's responsibility."

"Because they suggested we do it on TV."

"Conserve energy. Just to do my part. Keep bills down."

"Because I know businesses are running during the day and I'll wait my turn."

"Because of everyone talking about the Flex Alert."

"Because they asked us to help conserve because of the Northern California fires."

"The news says to save energy."

"Because we were having blackouts, so we had to do things differently."

"Well, it was pretty obvious that there was going to be a big drain on supply, so we wanted to conserve as much as we could and hopefully help with the expense too."

7.2 Unaided Recall of Energy Conservation Messages and Associated Actions

Table 7-4 summarizes respondents' recall of "any advertisements, announcements, emails, word-of-mouth, or other notices about conserving electricity during the past 10 days." Overall, 61% of all respondents recalled hearing some kind of energy conservation message.[22] Slightly more respondents in large designated media areas (DMAs) recalled hearing an energy conservation message than those in smaller DMAs, but the difference was not statistically significant. Some interesting comparisons can be made, for instance, the level of recall in Sacramento is significantly higher (69%) than in Los Angeles (59%).

Table 7-4. Respondents Who Saw an Energy Conservation Message – by DMA and DMA Size

	% of Respondents	Confidence Interval @ 90%
Large DMAs	**62%**	**59% - 64%**
Sacramento	69%	63% - 75%
San Francisco	66%	59% - 73%
San Diego	61%	54% - 68%
Los Angeles	59%	55% - 63%
Smaller DMAs	**58%**	**54% - 63%**
Santa Barbara	76%	63% - 89%
Palm Springs	63%	55% - 71%
Monterey	58%	43% - 73%
Fresno	55%	47% - 63%
Bakersfield	55%	42% - 68%
Chico	42%	27% - 57%
Total	**61%**	**59% - 63%**
Statistics (Large vs. Small Comparison) Chi-Square, df, Asymp. Sig.	*1.193, 1, .275*	
Note: the difference between large and small DMAs is not statistically significant at the 90% level. Individual DMA comparisons can be made by comparing the confidence intervals; if two particular DMAs' confidence intervals overlap, the difference between the two DMAs is *not* statistically significant.		

Respondents who lived in hotter climate zones did not report significantly higher levels of energy conservation message recall than those living in cooler climates (61% and 59%, respectively), which is expected given that individual DMAs span multiple climate zones and advertising

[22] This compares to 55% who recalled seeing an energy conservation message in the 2007 post-event survey, a statistically significant comparison.

purchases and news coverage on the television and radio will vary by media market (DMA), not climate zone.

Respondents who reported seeing an energy conservation message were statistically significantly more likely to have taken action to reduce their electricity consumption.[23] Fully one-quarter (25%) of respondents who recall an energy conservation message reported taking conservation actions, compared to 18% of those who did not recall such a message.[24] In other words, 15% of all respondents both saw an energy conservation message *and* reported taking conservation actions when asked if they did anything differently regarding electricity consumption in the past 10 days (Table 7-5). Note that the question regarding energy-related actions was specifically worded to avoid prompting respondents to come up with energy conservation actions (as discussed in Section 7.1).

Table 7-5. Respondents Who Reported Taking Energy Conservation Actions – by Recall of Energy Conservation Message

	Conserved	Did Not Conserve	Total
Saw an energy conservation message or alert	15%	46%	61%
Did not see an energy conservation message or alert	7%	32%	39%
Total	**22%**	**78%**	**100%**
Statistics (Recall vs. Non-Recall Comparison) Chi-Square, df, Asymp. Sig.	*9.620, 1, .002*		
Note that percentages are of all respondents, i.e., 15% of all respondents both saw an alert and reported taking conservation actions.			

Note that the survey instrument does not specifically ask respondents if they were influenced by the message to take conservation actions; rather, the survey instrument asks about changes in energy consumption *prior* to mentioning energy conservation, to reduce social desirability bias. The results do not "prove" that the messages *caused* respondents to take action, but rather demonstrate an association between taking energy conservation and recalling an energy conservation message. It is likely that some respondents who both conserved and recalled a message would have conserved anyway, due to a desire to save money or out of environmental concerns; however, some of those people may have been indirectly influenced by the Flex Alert campaign.

Television was by far the most commonly cited source of the energy conservation message, mentioned by 43% of respondents who recalled a message (Table 7-6). Radio and newspaper came in a distant second and third with 13% and 10%, respectively (note that respondents can provide more than one response). Very few respondents reported seeing an energy conservation message via email (1%), utility website (0.2%), or the Flex Your Power website (0.1%).

[23] Note that this is referring to respondents who reported taking energy conservation actions when they were asked if they did took any actions to change how they used electricity in the past ten days (i.e., the unprompted question discussed in Section 7.1)

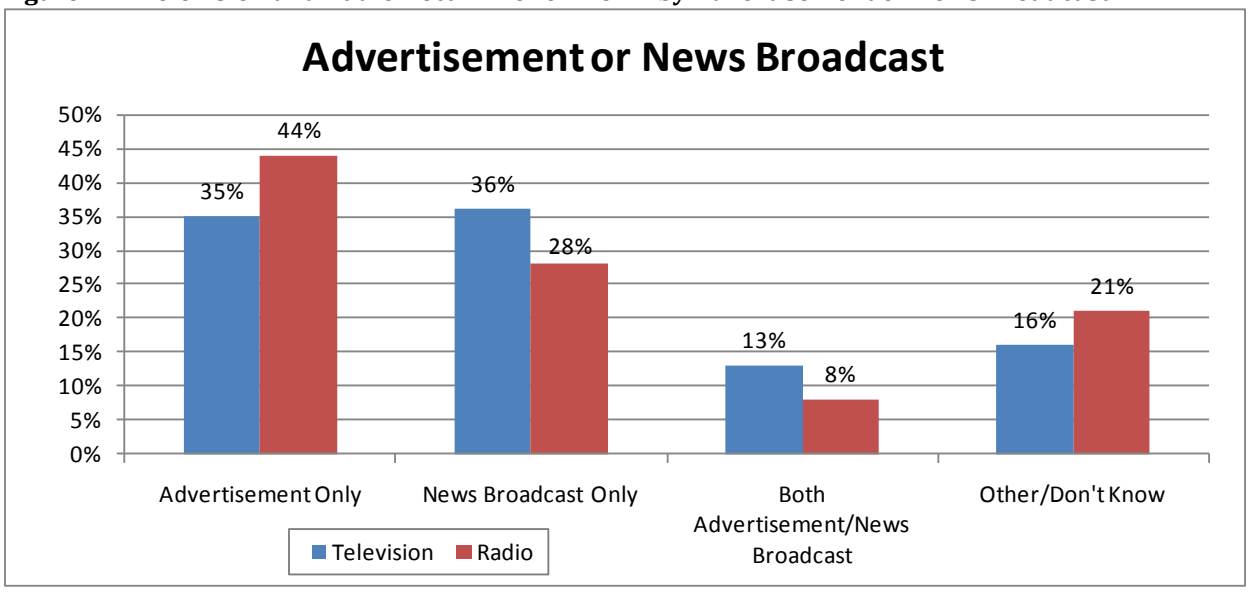
[24] This difference is statistically significant at the 90% confidence level. Chi-square statistics: 9.620, 1, .002.

Table 7-6. Source of Energy Conservation Message

	% of Respondents Who Recalled Ad
Television	43%
Radio	13%
Newspaper	10%
Emails	1%
Billboard	1%
Electric utility representative	1%
Other website	1%
Magazine or business journal	1%
Utility website (SCE, SD&GE, PG&E)	0.2%
Text messages on cell phone	0.2%
Flex Your Power website	0.1%
Electronic message boards (e.g., those that display public messages such as Amber Alerts)	0.1%
Other*	7%
Don't know	2%
Note: respondents could provide more than one response. * Common "other" responses included utility bill inserts, regular mail, and word-of-mouth.	

If respondents recalled seeing/hearing an energy conservation message on television or the radio, they were asked to clarify whether the message they saw was an advertisement or part of a news broadcast (or both). Of those who saw a television message, 35% recalled seeing only an advertisement, 36% recalled seeing only a relevant news broadcast, and 13% recalled seeing both an ad and a news broadcast (Figure 7-1). On the radio, more people heard an advertisement than a relevant news broadcast (44% heard an ad, 28% heard a news broadcast, and 8% heard both).

Figure 7-1. Television and Radio Recall Broken Down by Advertisement or News Broadcast



The vast majority of respondents indicated that they were at home when they first heard the energy conservation message (83%); 11% said they were in the car and 2% said they were at work.

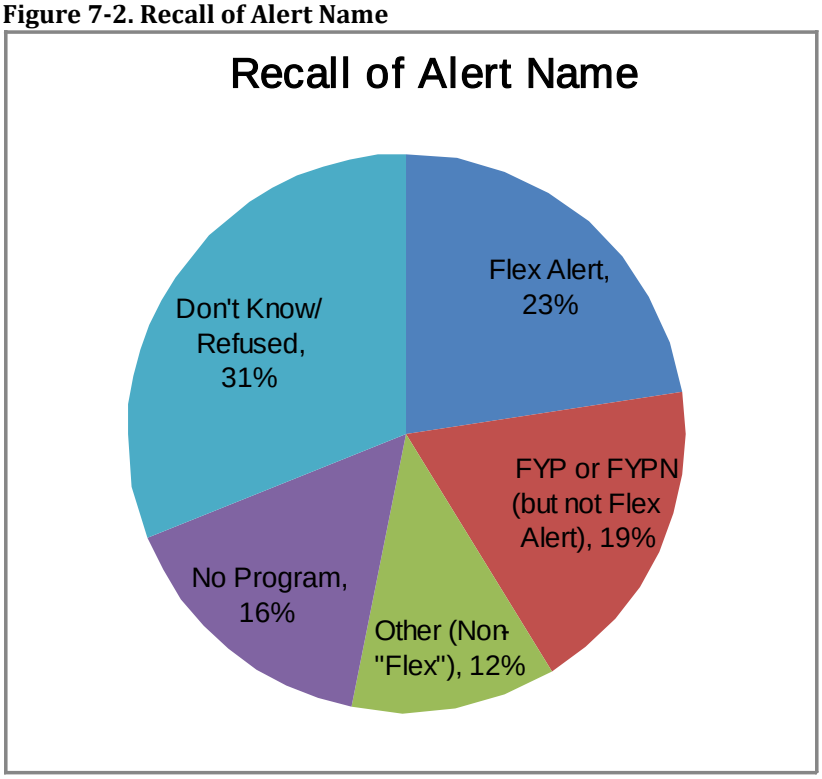
Respondents who saw an energy conservation message were then asked if the message that they saw mentioned a specific alert/program name. A list of different program/alert names was read in a randomized order, including dummy names, and respondents could select multiple program names that they recalled. Results are summarized in Table 7-7. The most commonly recognized names were Flex Your Power (24%), Flex Alert (23%), and Flex Your Power NOW! (12%).

Table 7-7. Recall of Alert Name – Energy Conservation Messages

	% of Respondents Who Recalled Ad
No specific program was mentioned	16%
Flex Your Power	24%
Flex Alert	23%
Flex Your Power NOW!	12%
Energy Alert	7%
Conservation Alert	6%
Summer Saver	4%
Smart A/C	4%
Power Watch Day	4%
Summer Discount Plan	4%
Other	3%
Don't Know/Refused	31%
Note: respondents could provide more than one response.	

Figure 7-2 summarizes respondents' recall of alert names based on whether they recognized the term "Flex Alert," whether they recognized Flex Your Power or Flex Your Power NOW! (but *not* Flex Alert), or if they recognized any non-Flex related terms (but *none* of the Flex terms). In simpler terms, 23% of respondents who saw an alert identified the alert as a "Flex Alert." An additional 19% of respondents recognized the term "Flex Your Power" or "Flex Your Power NOW!," but not "Flex Alert." Thus, 42% of all respondents associated the alert they saw with the "Flex" brand. Another 12% *only* recognized a "non-Flex" alert name, and nearly half (47%) either said they did not associate the alert with a particular program name or did not know what the program name was.

Figure 7-2. Recall of Alert Name



7.3 Aided Recall of Flex Alerts

After asking questions about energy conservation messages in a generalized sense, the interviewers specifically described the Flex Alert ads and asked respondents if they recalled seeing the television ads or hearing the radio ads. Seventeen percent of all respondents recalled the Flex Alert television ad (Table 7-8)[25] and 11% of all respondents recalled the Flex Alert radio ad (Table 7-9). There was no statistically significant difference in recall levels between large DMA and small DMA residents for either television or radio ads.

[25] Note that in the 2007 post-event survey, 9% of respondents recalled the same Flex Alert TV ad when described. The increase between the 2007 and 2008 post-event survey is statistically significant. However, in the 2007 post-event survey, there was a statistically significant difference between large and small DMAs, whereas the 2008 post-event survey found no such difference. This may be due to the reported shift in the media purchasing strategy in which more focus is placed on the inland regions (see Section 5.1).

Table 7-8. Respondents Who Saw a Flex Alert TV Ad – by DMA and DMA Size

	% of Respondents	Confidence Intervals @ 90%
Large DMAs	**17%**	**15% - 19%**
Los Angeles	18%	15% - 21%
San Francisco	18%	13% - 23%
Sacramento	16%	11% - 21%
San Diego	12%	7% - 17%
Smaller DMAs	**19%**	**16% - 23%**
Fresno	23%	16% - 30%
Palm Springs	23%	16% - 30%
Santa Barbara	21%	9% - 33%
Monterey	19%	7% - 31%
Bakersfield	12%	4% - 20%
Chico	6%	0% - 13%
Total	**17%**	**15% - 19%**
Statistics (Large vs. Small Comparison) Chi-Square, df, Asymp. Sig.	*1.219, 1, .270*	

Note: the difference between large and small DMAs is not statistically significant at the 90% level. Individual DMA comparisons can be made by comparing the confidence intervals; if two particular DMAs' confidence intervals overlap, the difference between the two DMAs is *not* statistically significant. A few significant comparisons can be made from this data, e.g., the level of recall in Los Angeles, Fresno, and Palm Springs is significantly higher than the level of recall in Chico.

Table 7-9. Respondents Who Heard a Flex Alert Radio Ad – by DMA and DMA Size

	% of Respondents	Confidence Interval @ 90%
Large DMAs	**12%**	**10% - 14%**
San Francisco	15%	10% - 20%
Los Angeles	12%	10% - 14%
Sacramento	12%	8% - 16%
San Diego	9%	5% - 13%
Smaller DMAs	**9%**	**7% - 12%**
Monterey	16%	5% - 27%
Fresno	11%	6% - 16%
Chico	9%	1% - 17%
Santa Barbara	9%	1% - 17%
Palm Springs	8%	3% - 13%
Bakersfield	5%	0% - 11%
Total	**11%**	**10% - 13%**
Statistics (Large vs. Small Comparison) Chi-Square, df, Asymp. Sig.	*1.844, 1, .174*	

Note: the difference between large and small DMAs is not statistically significant at the 90% level, but it is significant at the 80% level. Individual DMA comparisons can be made by comparing the confidence intervals; if two particular DMAs' confidence intervals overlap, the difference between the two DMAs is *not* statistically significant. In this case, none of the differences between individual DMAs are statistically significant.

Table 7-10 summarizes the recall of either an energy conservation message (as discussed in Section 7.2) and/or a Flex Alert TV or radio advertisement (the aided recall discussed in this section). Overall, 67% of respondents recalled seeing either an energy conservation message and/or a Flex Alert advertisement. In this comparison, respondents in large DMAs have statistically significantly higher recall than those in small DMAs (69% compared to 63%).

Table 7-10. Respondents Who Recall Either an Energy Conservation Message and/or a Flex Alert TV or Radio Advertisement

	% of Respondents	Confidence Interval @ 90%
Large DMAs	**69%**	**66% - 71%**
San Francisco	75%	69% - 81%
Sacramento	74%	68% - 80%
Los Angeles	66%	62% - 70%
San Diego	66%	59% - 72%
Smaller DMAs	**63%**	**59% - 68%**
Santa Barbara	76%	63% - 88%
Palm Springs	66%	57% - 74%
Monterey	65%	50% - 79%
Fresno	64%	57% - 72%
Bakersfield	60%	47% - 72%
Chico	46%	31% - 60%
Total	**67%**	**65% - 69%**
Statistics (Large vs. Small Comparison) Chi-Square, df, Asymp. Sig.	*2.966, 1, .085*	

Note: the difference between large and small DMAs is statistically significant at the 90% level. Individual DMA comparisons can be made by comparing the confidence intervals; if two particular DMAs' confidence intervals overlap, the difference between the two DMAs is *not* statistically significant.

The second column of Table 7-11 summarizes respondents' recollections of what the Flex Alert TV or radio ads requested that they do. The most common response was "use appliances after 7 PM" (45%), followed by "set thermostat to 78 degrees or higher" (27%) and "turn off unneeded lights" (24%). Note that answer categories were not read to the respondents; these are requested actions that respondents were able to recall without prompting. Respondents who recalled another energy conservation message (but not the Flex Alert television or radio ad) were also asked what the message they saw asked them to do (third column of Table 7-11). Significantly fewer respondents who just saw a non-Flex Alert energy conservation message were able to name any of the three major conservation actions requested by the Flex Alert campaign (appliances after 7 PM, turn off unneeded lights, set thermostat to 78 degrees). Also, far more respondents who saw a non-Flex Alert energy conservation message were unable to name a single conservation action suggested by the message they saw (29% compared to 14% who saw a Flex Alert). This indicates that the Flex Alert advertising is effective in conveying the specific requested energy conservation actions.

Table 7-11. Recall of Requested Actions – by Recall of Flex Alert vs. Other Energy Conservation Message

	% of Respondents Who Recalled Flex Alert	% of Respondents Who Recalled Energy Conservation Message (but not Flex Alert)
Use appliances after 7 PM*	45%	31%
Set thermostat to 78 degrees or higher*	27%	19%
Turn off unneeded lights*	24%	17%
Don't use appliances	12%	9%
Other	29%	29%
Don't know*	14%	29%

Note: respondents could provide more than one response. Common "other" responses included a general "conserve energy," "change to CFL light bulbs," "go to cooling centers," etc.

* Asterisks indicate that the difference between those who saw a Flex Alert and those who saw another type of energy conservation message is statistically significant at the 90% confidence level.

Respondents were also asked about the timeframe of the Flex Alert or energy conservation message's request for energy conservation. Nearly half (49%) of respondents who recalled a Flex Alert TV or radio ad correctly stated that conservation was requested for a particular time of day, compared to 37% of respondents who saw another non-Flex Alert energy conservation message. However, just 15% of respondents who saw a Flex Alert understood that conservation was needed on a particular day, as opposed to long-term (19%) or seasonally (11%). This is similar to findings from the 2007 survey efforts, which found that while many respondents understood that conservation was needed during a particular time of day, many interpreted the alerts and advertisements as asking for long-term conservation rather than on specific, critical days.

Table 7-12. Timeframe for Requested Conservation Actions – by Recall of Flex Alert vs. Other Energy Conservation Message

	% of Respondents Who Recalled Flex Alert	% of Respondents Who Recalled Energy Conservation Message (but not Flex Alert)
Over the long-term	19%	18%
Seasonally	11%	11%
On a particular day*	15%	9%
At a particular time of day*	49%	37%
Other	5%	4%
Don't know*	19%	28%

Note: respondents could provide more than one response.

* Asterisks indicate that the difference between those who saw a Flex Alert and those who saw another type of energy conservation message is statistically significant at the 90% confidence level.

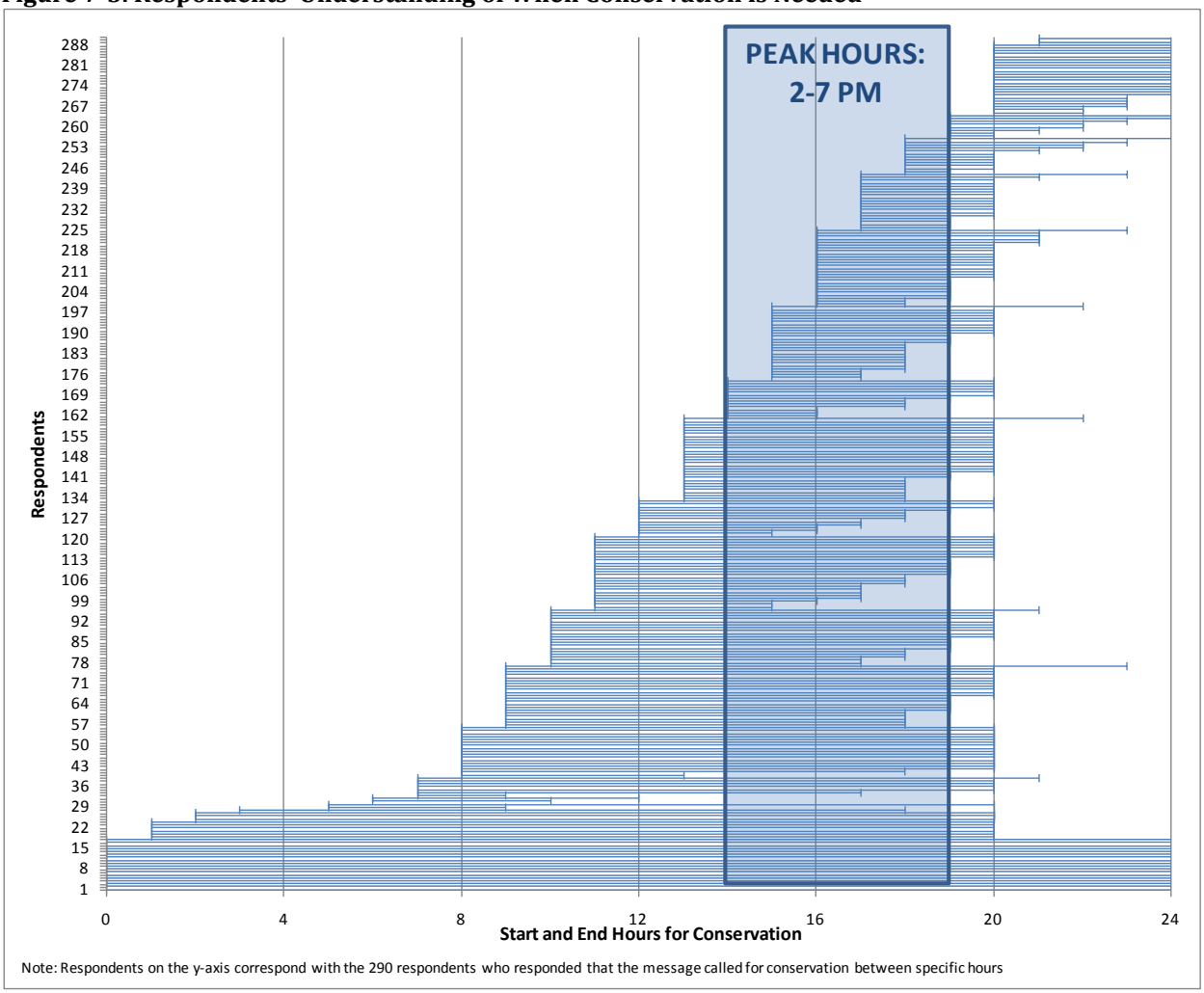
Respondents who replied that the message called for conservation at a particular time of day were asked to define that time of day. Figure 7-3 displays each respondent's starting and ending time for

when they think conservation is needed, according to the message that they saw. Various communications related to the Flex Alert used different time periods, but generally the peak times were identified as between 2 and 7 PM, or some time period within those hours such as 3-6 PM.[26] Fully 56% of respondents who said that conservation was needed during a specific time of day identified the start time as *prior to* 2 PM. An additional 9% said that the start time for conservation was *after* 7 PM.

Respondents had a similarly fuzzy idea of when the time for conservation ended, as well. Nearly two-thirds (66%) thought that conservation was needed until 8 PM or later.

Despite this seemingly inaccurate understanding of the start and end times, nearly all respondents' perception of peak times for conservation include at least some of the critical hours between 2 and 7 PM (shaded in blue in the figure below).

Figure 7-3. Respondents' Understanding of When Conservation is Needed



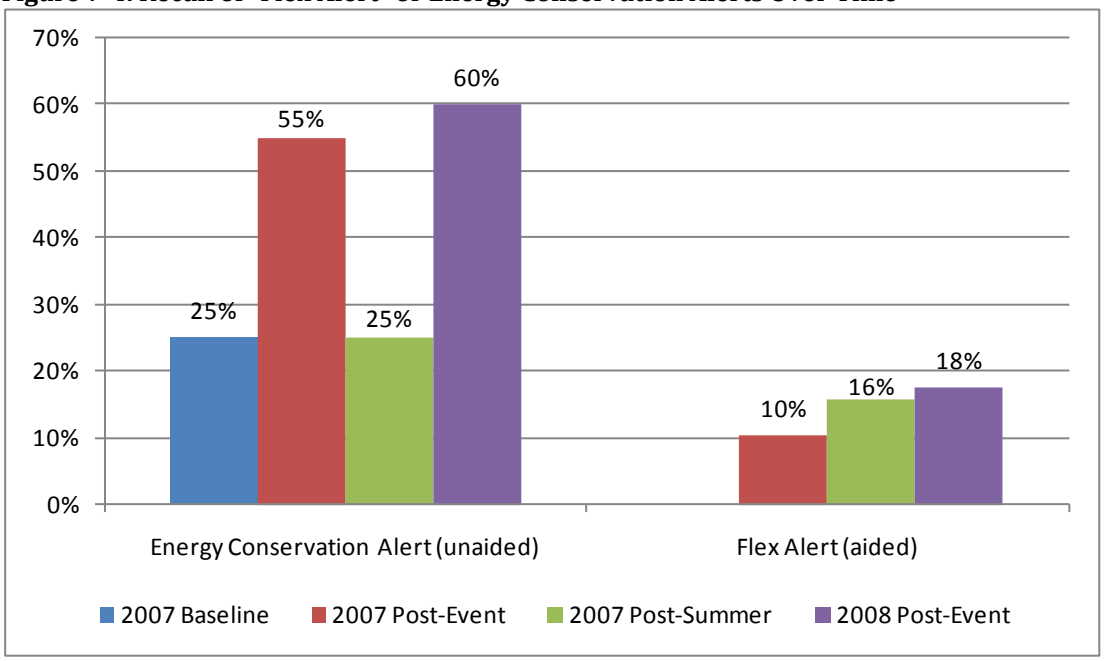
Note: Respondents on the y-axis correspond with the 290 respondents who responded that the message called for conservation between specific hours

[26] Note that most Flex Alert messaging requests conservation during the afternoon with no specific start time and an end time of 7 PM; however, in the CAISO press release announcing the July 2008 Flex Alert, the hours of 3-6 PM were specified as the peak hours.

7.4 Flex Alert Recall Over Time

Figure 7-4 summarizes Flex Alert and energy conservation message recall over the four survey efforts that Summit Blue has conducted as part of this evaluation.[27] Unaided recall of messages or alerts related to energy conservation is significantly higher in the two post-event surveys than in the 2007 baseline or 2007 post-summer surveys; in the 2008 post-event survey, fully 60% of respondents recalled seeing some sort of energy conservation message in the previous 10 days. Aided recall of the Flex Alert TV ad has risen from 10% in the 2007 post-event survey to 18% in the 2008 post-event, a statistically significant increase. Note that percentages may differ slightly from previous reports because the results have been weighted according to DMA population, to account for differences in sampling plans over the various survey efforts as discussed in Section 2.2.

Figure 7-4. Recall of "Flex Alert" or Energy Conservation Alerts Over Time



Note: The changes in recall from the 2007 post-event survey to the 2008 post-event survey are statistically significant for both Flex Alerts and energy conservation alerts.

7.5 Actions Taken in Response to Flex Alert Advertisements or Other Energy Conservation Messages

Respondents who recalled a Flex Alert TV or radio ad or another energy conservation message[28] were asked what actions they took in response to the message that they saw. Overall, 55% of all

[27] Note that this includes the three survey efforts conducted in 2007 as part of the 2006-2007 program year evaluation (reported in the previous evaluation report) as well as the one survey conducted in 2008 (the 2008 post-event survey).

[28] "Another energy conservation message" may actually have been the Flex Alert message (either an advertisement or news broadcast) that the survey respondent just did not specifically associate with the Flex Alert brand, or it may have been another conservation message coming from the local utility or an environmental group. The other messaging may have been a general conservation message (i.e., conserve energy whenever you can) as opposed to the Flex Alert campaign's focus on conserving during peak hours on critical days.

respondents who saw a message took some sort of energy conservation action in response (Table 7-13). Respondents who recalled a Flex Alert ad (as opposed to those who just saw another energy conservation message) were somewhat more likely to have conserved (58% compared to 54%), but the difference was not statistically significant. The most common action taken was using appliances after 7 PM (24% of all respondents who saw an alert or message). Approximately 30% either set their thermostat to 78 degrees or higher or turned off the air conditioner altogether. Overall, respondents who saw a Flex Alert took largely the same actions as those who saw another type of energy conservation message, with the exception of one action: Flex Alert viewers were significantly more likely to report using appliances after 7 PM (28% compared to 21%).

Table 7-13. Actions Taken in Response to Flex Alert or Energy Conservation Message

	% of Respondents Who Recalled Flex Alert	% of Respondents Who Recalled Energy Conservation Message (but not Flex Alert)	% of All Respondents Who Recalled Alert or Message
Took action in response to Flex Alert or other energy conservation message	**58%**	**54%**	**55%**
Use appliances after 7 PM*	28%	21%	24%
Set thermostat to 78 degrees or higher	19%	17%	18%
Turn off air conditioner	11%	12%	12%
Turn off unneeded lights	22%	21%	21%
Don't use appliances	12%	11%	11%
Other	17%	15%	16%
Did not take any actions in response to the Flex Alert or other energy conservation message	**39%**	**40%**	**39%**
Don't know/Refused	3%	7%	6%

Note: respondents could provide more than one response.

* Asterisks indicate that the difference between those who saw a Flex Alert and those who saw another type of energy conservation message is statistically significant at the 90% confidence level.

Respondents in different DMAs had varying levels of compliance with the alerts and messages that they saw (Table 7-14), although many of these differences were not statistically significant.[29] Fully two-thirds (67%) of Sacramento DMA residents took action in response to the alert that they saw, compared to less than half (46%) of San Francisco DMA residents, with San Diego and Los Angeles DMAs in the middle of that range. Overall, 55% of all respondents who saw a message or alert took some action to conserve, indicating that a sizeable portion of the population is willing to conserve electricity when it's necessary; of course, not all Californians are made aware of the need for conservation, so that 55% of respondents who saw a message translates to 37% of all respondents. Interestingly, even though larger DMA respondents had slightly higher levels of alert/message recall than their smaller DMA counterparts, smaller DMA respondents had slightly higher levels of conservation in response to the alert. These factors counterbalance each other, resulting in the

[29] Since this question was asked only of respondents who recalled an energy conservation message or Flex Alert, the sample sizes are smaller than for most other questions, which affects the ability to make statistically valid comparisons, particularly between the smaller DMAs.

share of respondents who saw an alert/message *and* conserved in response to the message equaling 37% for both large and small DMAs (see the fourth and fifth columns of Table 7-14).

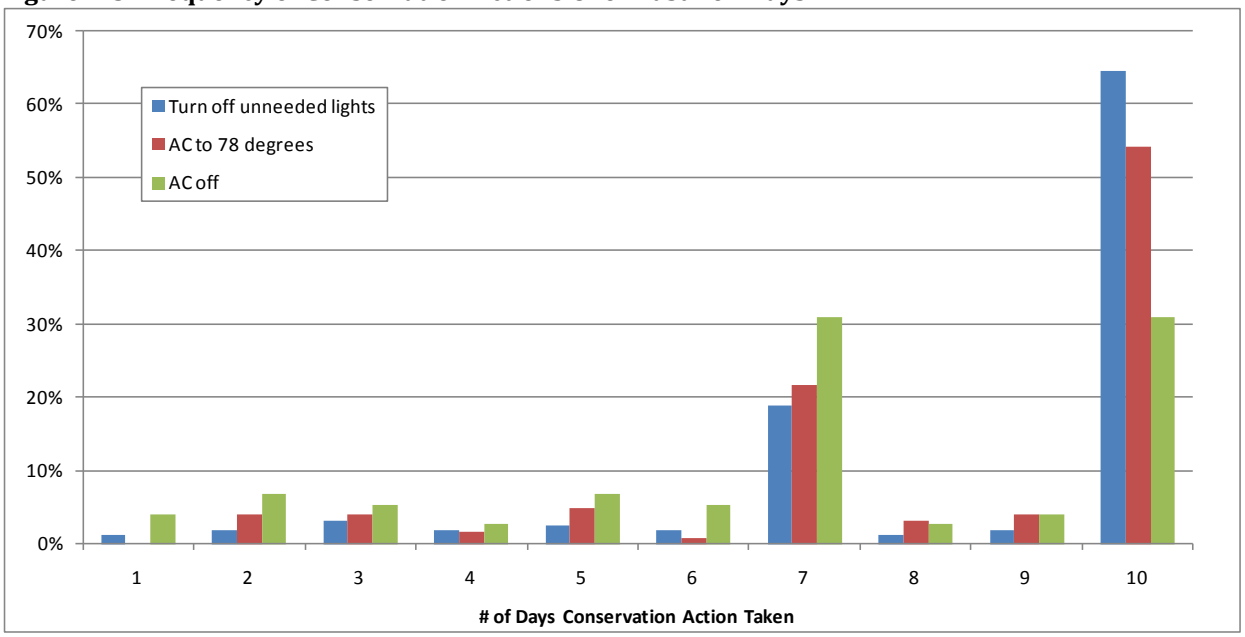
Table 7-14. Took Conservation Action in Response to Flex Alert or Energy Conservation Message – by DMA and DMA Size

	% of Respondents Who Saw a Message	Confidence Interval @ 90%	% of All Respondents	Confidence Interval @ 90%
Large DMAs	**54%**	**51% - 57%**	**37%**	**34% - 40%**
Sacramento	67%	59% - 75%	49%	42% - 56%
San Diego	61%	51% - 71%	29%	23% - 35%
Los Angeles	56%	51% - 61%	37%	33% - 40%
San Francisco	46%	38% - 54%	34%	28% - 41%
Smaller DMAs	**59%**	**53% - 64%**	**37%**	**32% - 41%**
Palm Springs	62%	52% - 73%	41%	32% - 49%
Fresno	61%	51% - 71%	39%	31% - 47%
Santa Barbara	60%	43% - 77%	45%	31% - 60%
Chico	53%	31% - 76%	24%	12% - 37%
Bakersfield	52%	35% - 69%	31%	19% - 43%
Monterey	50%	31% - 69%	32%	18% - 46%
Total	**55%**	**52% - 58%**	**37%**	**35% - 39%**
Statistics (Large vs. Small Comparison) Chi-Square, df, Asymp. Sig.	*1.344, 1, .246*		*0.009, 1, .925*	

Note: the difference between large and small DMAs is not statistically significant at the 90% level. Individual DMA comparisons can be made by comparing the confidence intervals; if two particular DMAs' confidence intervals overlap, the difference between the two DMAs is *not* statistically significant.

Respondents who took certain conservation actions were asked on how many of the past ten days they had taken that action. Responses to this question revealed that many respondents were reporting that they took actions every single day, not just on the three Flex Alert days. This outcome reinforces prior findings that while respondents understand that conservation is needed during a specific *time of day*, many don't understand that conservation is especially needed on specific days (i.e., the Flex Alert days). Figure 7-5 shows that the majority of respondents who either turned off unneeded lights, set the thermostat to 78 degrees or higher, or turned off the air conditioner altogether did so at least seven out of the last 10 days. Nearly 65% of those who reported turning off unneeded lights said that they did so on each of the past 10 days, indicating that they may be describing a habitual behavior rather than a reaction to the energy conservation messaging that they saw. Flex Alert messaging should praise Californians for their continuing efforts to conserve energy and then push them to take the conservation just a little further (beyond habitual actions) on critical Flex Alert days.

Figure 7-5. Frequency of Conservation Actions Over Past Ten Days



Respondents who said that they did not take any actions in response to the message or alert that they saw were asked *why* they did not conserve. The vast majority of responses were variations on two themes: "I'm already conserving all I can" and "I don't have air conditioning, so there's nothing I can do." A number of respondents said that they already had the thermostat set to 78 degrees, so they didn't need to do any more. A few respondents mentioned that they were not willing to sacrifice the comfort of the air conditioner, sometimes due to medical conditions. For example:

> *"Because I want the air conditioner on when I need it. I do my laundry in the morning, but if I'm hot, I have to have the air conditioner on."*
>
> *"I'm nine months pregnant, I have to stay cool."*
>
> *"Wasn't much I could except turn off my swamp cooler, and I wasn't about to do that in 113 degree weather."*

Some respondents indicated that they did not find the advertisement compelling or meaningful or that they "just didn't feel like it." For example:

> *"Advertisement unconvincing."*
>
> *"I didn't consider it an alert, it was more like a news broadcast of what was going to happen, nothing immediate."*
>
> *"I don't know, I guess I just didn't care that much."*
>
> *"It wasn't appropriate at the time because there was no shortage and I conserve energy anyways."*
>
> *"Why should I?"*

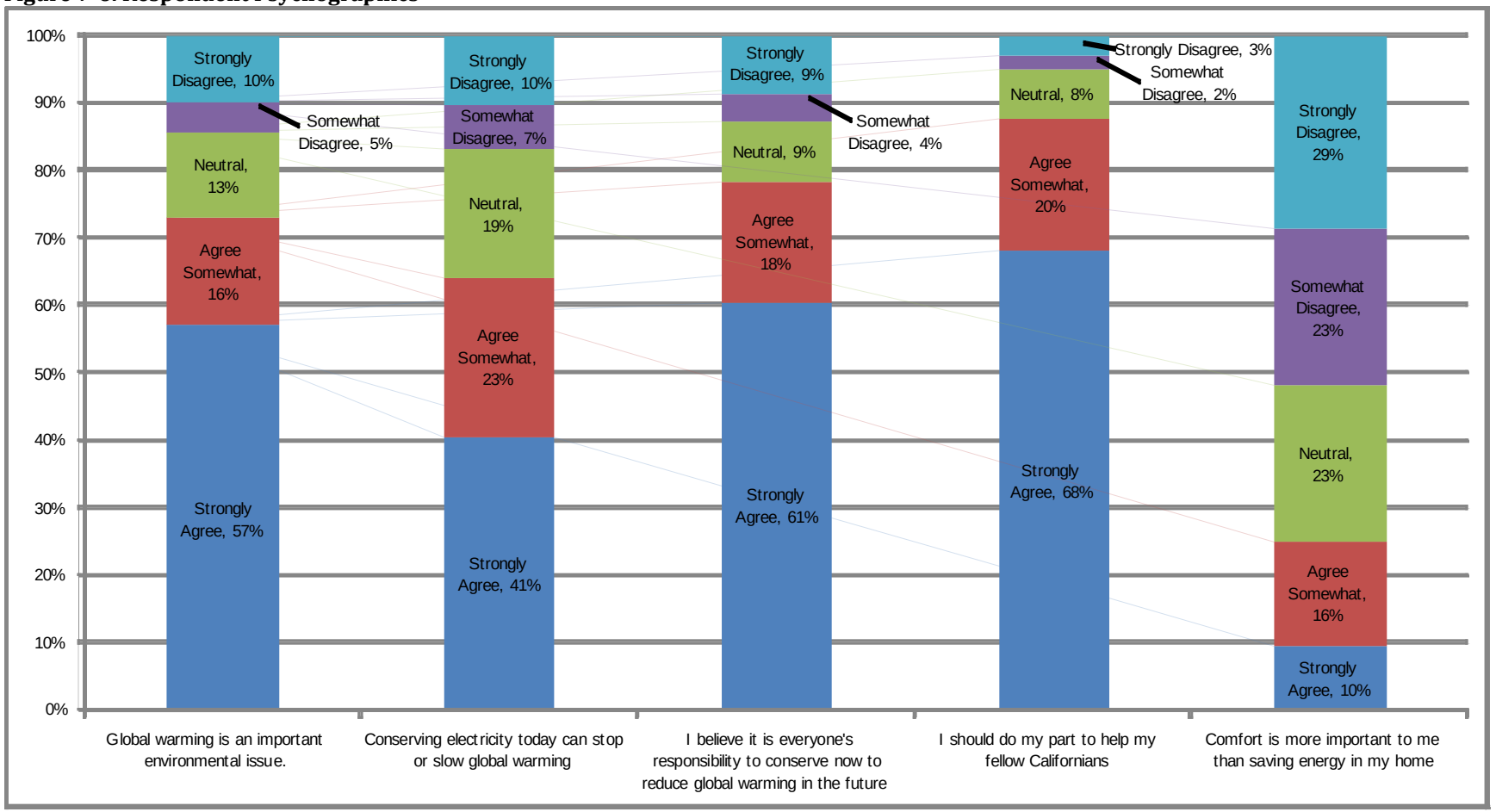
7.6 Information Seeking During Heat Waves

Respondents were asked if they visited any websites during California's heat wave to seek any additional information. Just 3% of respondents indicated that they did so; most reported visiting weather or news websites, although two respondents mentioned going to their utility's website. Ten respondents mentioned looking for information about ways to save energy; one specifically said that they were signed up for the Summer Saver program and wanted to know the hours in which to conserve. Several respondents indicated that they were looking for information about air quality issues or the location of the wildfires. Others were simply looking for the weather forecast.

7.7 Respondent Psychographics

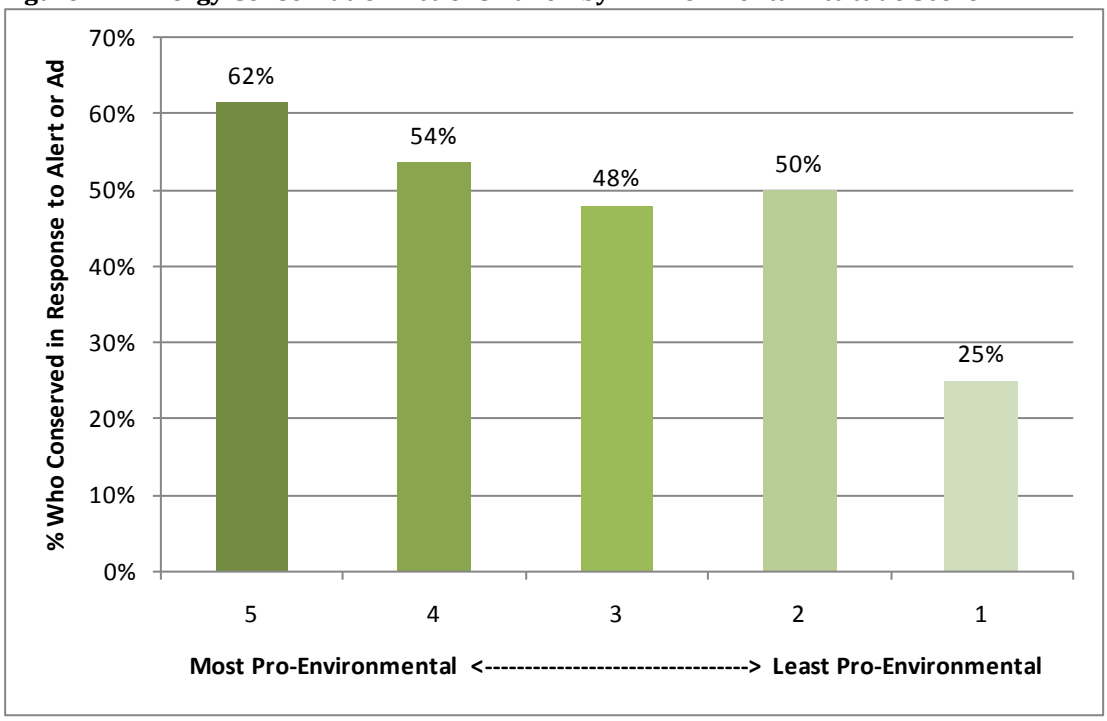
Respondents were asked to rate their agreement with a series of psychographic statements related to attitudes about the environment, energy, and community on a scale of 1 to 5, with 1 meaning "strongly disagree" and 5 meaning "strongly agree" . Figure 7-6 summarizes the results of these psychographic questions. Overall, a majority of respondents agree that global warming is an important environmental problem (73%), that conserving electricity today can slow or stop global warming (64%), and that it's everyone's responsibility to do so (79%). Fully 88% of respondents agree that "I should do my part to help my fellow Californians." And just 26% feel that "comfort is more important to me than saving energy in my home."

Figure 7-6. Respondent Psychographics



To gauge whether respondents with pro-environmental attitudes were more responsive to the energy conservation alerts and messages that they saw, an average environmental attitude score was computed using the responses to "Global warming is an important environmental issue," "Conserving electricity today can stop or slow global warming," "I believe it is everyone's responsibility to conserve now to reduce global warming in the future," and "Comfort is more important to me than saving energy in my home."[30] A higher environmental attitude score did correlate with conserving energy in response to an alert or message seen in a statistically significant manner (Figure 7-7). Over 60% of respondents with an average environmental attitude score of 5 (indicating very pro-environmental attitudes) reported conserving in response to the Flex Alert or other energy conservation message seen.

Figure 7-7. Energy Conservation Actions Taken by Environmental Attitude Score



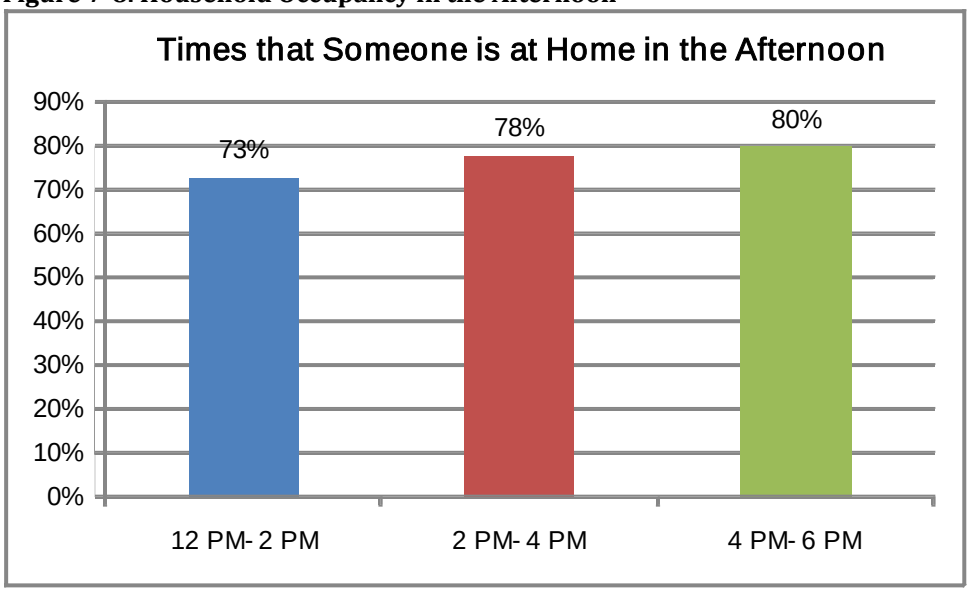
7.8 Respondent Home Characteristics

Most Californians will only be able to comply with a request to conserve energy during peak hours if they are at home during those hours.[31] The majority of respondents indicated that someone was at home between noon and 6 PM on typical summer weekday afternoons (Figure 7-8)[32].

[30] Note that in computing the average pro-environmental score, the inverse of the self-described agreement (1-5) with the statement "Comfort is more important to me than saving energy in my home," because agreement with that statement would actually indicate an anti-environmental/anti-conservation sentiment. In other words, if a respondent said that they strongly disagreed with the statement (a 1 on the scale of 1-5, with 5 indicating strong agreement), they would be assigned a 5 for the purposes of computing the pro-environmental attitude score because they are indicating a pro-environmental attitude and the other two psychographic questions that factor into the pro-environmental attitude score are phrased so that strong agreement (5) is the most pro-environmental stance.

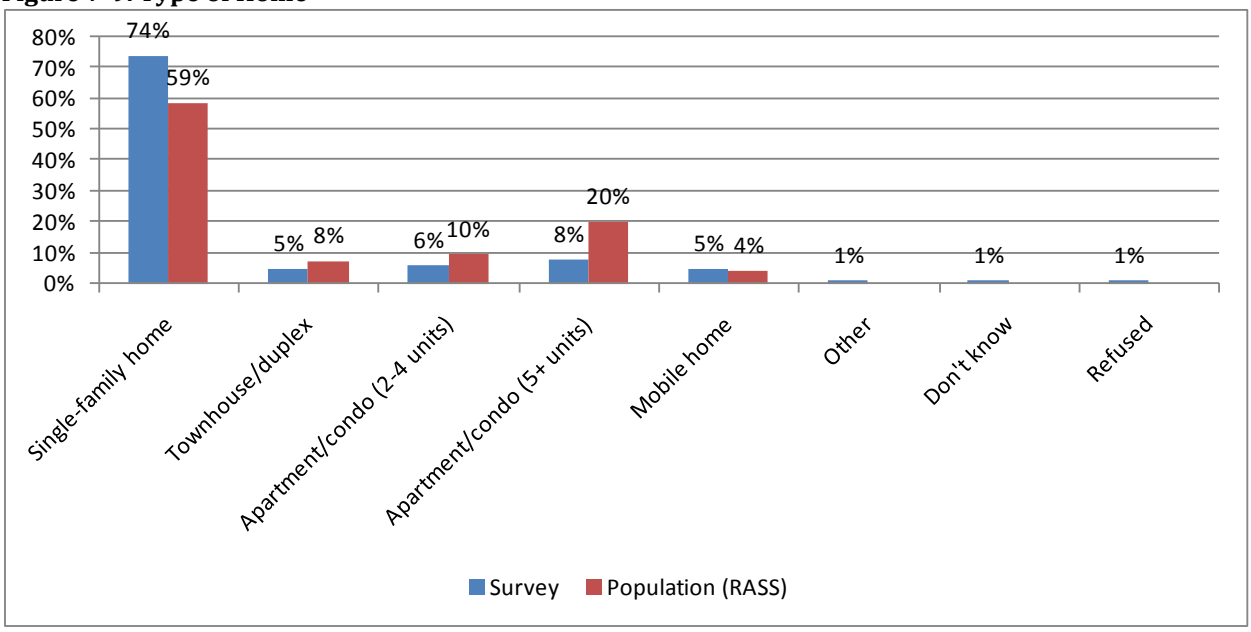
[31] Some people may be able to conserve while at work, e.g., turning off unused lights and equipment, but most workers do not have control over the air conditioner thermostat setting in their office or workplace.

Figure 7-8. Household Occupancy in the Afternoon



Respondents were asked a series of questions regarding their home to gauge the representativeness of the sample. Figure 7-9 displays respondents' home type, compared to the California population.[33] Single-family homes are somewhat overrepresented in the survey population, and apartment dwellers are somewhat underrepresented. Unsurprisingly given that single-family homes tend to be larger than apartments, the survey population is also slightly skewed towards larger homes (Figure 7-10).

Figure 7-9. Type of Home



[32] The U.S. Energy Information Administration's Residential Energy Consumption Survey (RECS) results indicate that 57% of California households have someone home all day. The relevant data can be found by downloading the file at http://www.eia.doe.gov/emeu/recs/recs2005/hc2005_tables/hc5spaceheatingindicators/excel/tablehc15.5.xls.

[33] The statistics for the California population as a whole were obtained from the California Statewide Residential Appliance Saturation Study, which is available at http://websafe.kemainc.com/RASSWEB/DesktopDefault.aspx.

Figure 7-10. Square Footage of Home

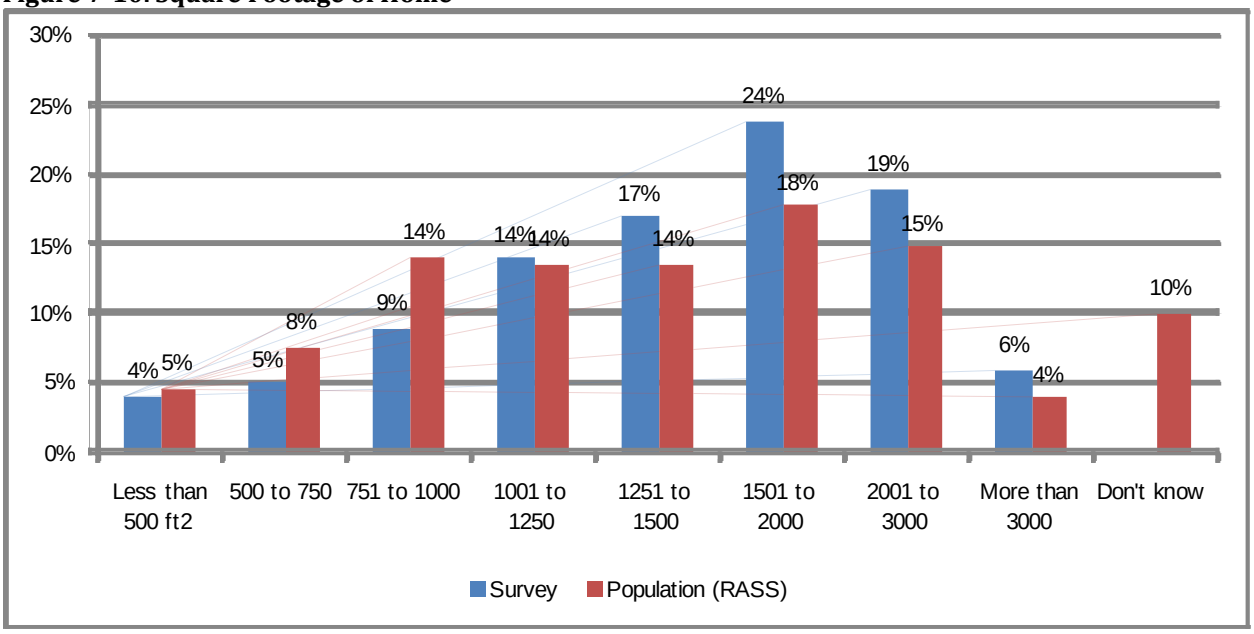
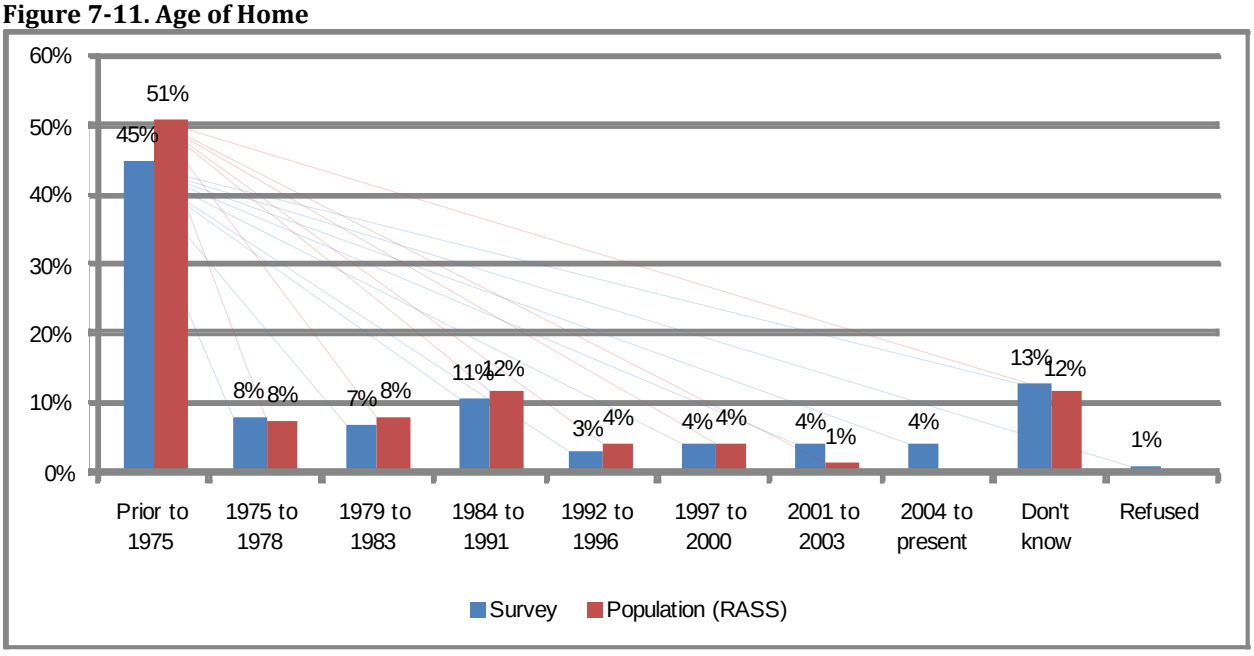


Figure 7-11 displays the ages of respondents' homes, which match the general population well. Note that the RASS survey approximation of the California population was completed in 2003, so naturally there would not be any buildings that were constructed in 2004 to the present.

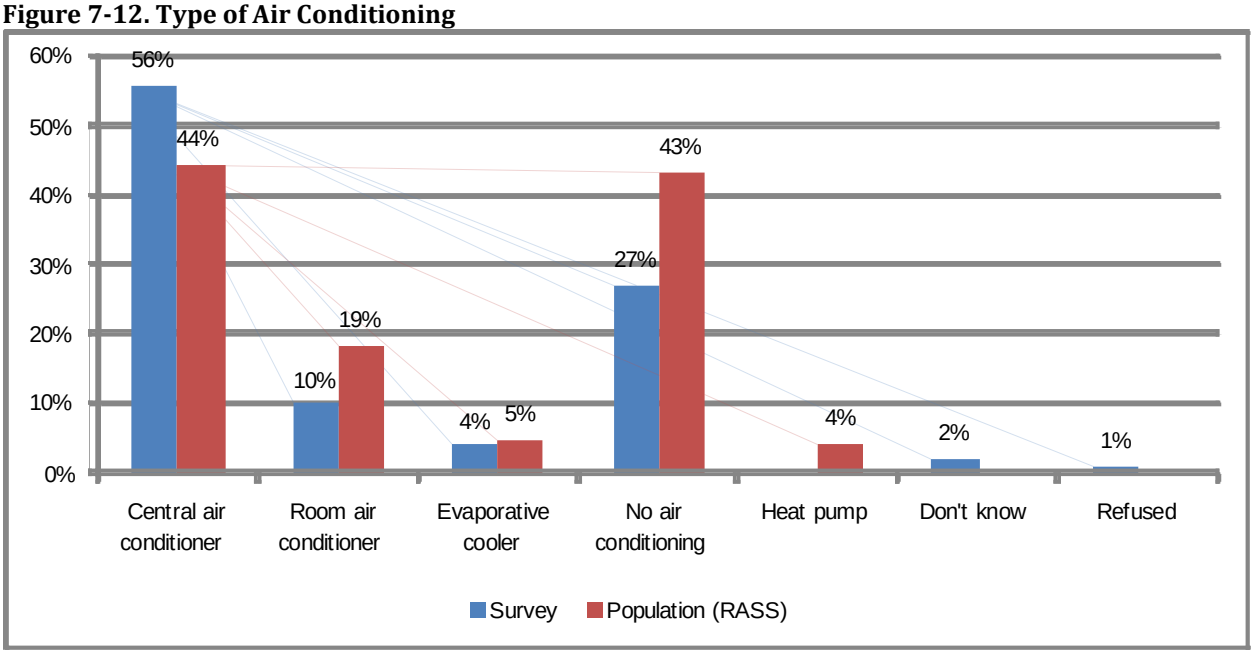
Figure 7-11. Age of Home



The survey population has more central air conditioning than the general California population (Figure 7-12); it also has fewer people with no air conditioning at all. However, this slight skew was

intentional because the survey sample was designed to oversample DMAs which had a high number of central AC units, to enhance the accuracy of the impact estimates.[34]

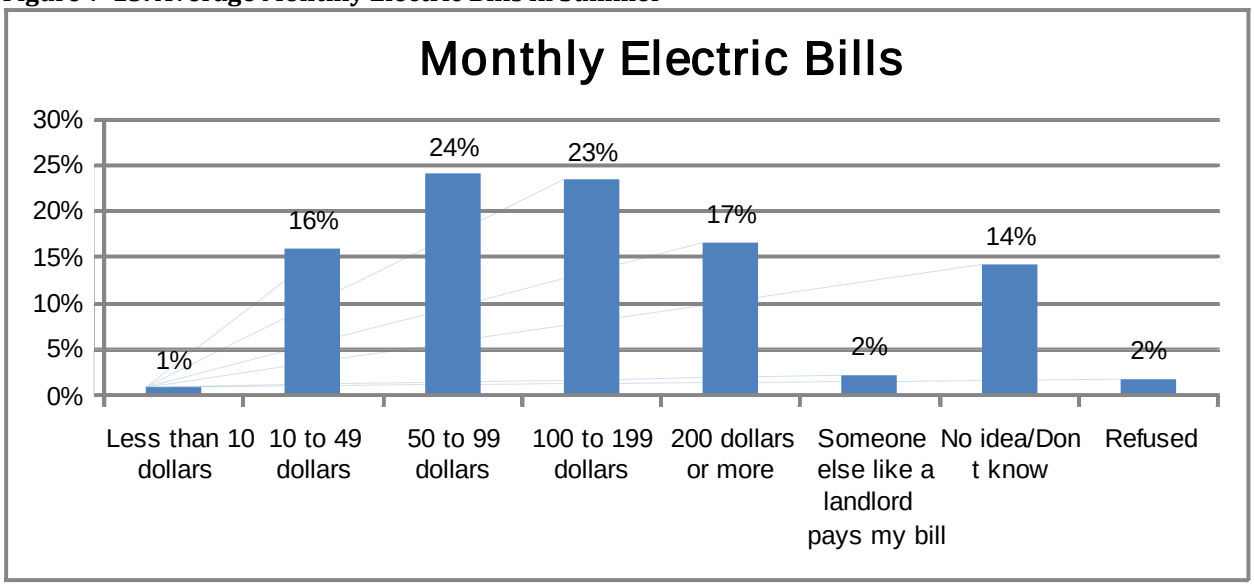
Figure 7-12. Type of Air Conditioning



[34] To ensure that the survey results regarding conservation actions taken were not biased by this slight skew in the survey sample, Summit Blue calculated a weighting factor in which actions taken by respondents with central AC were given slightly lower weight and additional weight was given to responses from respondents with room air conditioners, evaporative coolers, or no air conditioning at all (in proportion to the actual population). The results regarding the percentage of respondents who took conservation actions were within one percent of the unweighted results, so no weighting was used.

Figure 7-13 displays respondents' average monthly electric bills during the summer. It is important to note that while the question asks specifically about the electric portion of the bills, many Californians pay a combined electric and gas bill and may not be able to recall just the electric portion of their bill.

Figure 7-13. Average Monthly Electric Bills in Summer



8. INDIRECT IMPACT ESTIMATION

The post-event survey was used to estimate the demand response impact of the 2008 Flex Alert campaign. Lighting and air conditioning measures were predetermined to have the most savings potential; the survey was designed to include enough quantitative detail to perform a basic engineering analysis of these measures. This section summarizes the impact estimation approach and presents its results. This approach is an evolution of the approach used in the 2006/2007 Flex Alert evaluation; for reference, this section begins with a review of the 2006/2007 evaluation impact estimate.

8.1 Review of 2006/2007 Analysis

For the 2006/2007 Flex Alert evaluation, the Summit Blue team was directed to allocate a specific and finite budget to this analysis to provide an order of magnitude estimate of the likely demand response as well as potentially promising areas for future study. Three approaches were taken, with the respective objectives of estimating: 1) the aggregate impact of demand response (DR) programs in California; 2) the self-reported residential impact of the Flex Alert campaign; and 3) the observable residential impact of the Flex Alert campaign from customer-level interval load data. The first and broadest approach was to examine California Independent System Operator (CAISO) level forecast and actual load data to identify the aggregate demand response on Flex Alert event days. The second approach examined customer surveys to estimate the impact from residential air conditioner event response. The third was an econometric examination of customer-level interval load data. The following sub-sections describe these approaches.

8.1.1 Statewide Demand Response on Flex Alert Event Days

CAISO system-wide hourly load and day-ahead forecast load for summer 2006 and summer 2007 were collected and analyzed. An econometric analysis identified, with 90% confidence, between 189 MW and 1085 MW of statewide demand response, including from direct demand response programs. The large range in the estimate is a result of forecast error (from the day-ahead forecast). In fact, on four of the 18 Flex Alert event days (other DR programs were also active on all 18 of these days), the actual peak hourly load was *greater* than the day-ahead forecast. The largest example of this was on June 28, 2006, a Flex Alert day in which the peak load exceeded the forecasted load by 2.2 GW (5% of the actual peak load).

8.1.2 Analysis of 2006/2007 Survey Results

Three surveys were conducted for the 2006/2007 evaluation; a baseline survey conducted in spring 2007, asking about actions taken during summer 2006; a post-event survey conducted immediately after the August 29-31 Flex Alert; and a post-summer survey conducted in fall 2007. Each survey instrument had a slightly different design; all allowed for a rough impact estimate by identifying what actions a respondent took (reduced lighting, reduced air conditioning, reduced appliance usage), the frequency of the actions, and the climate zone of the respondent (useful for air conditioner modeling). Due to the significant contribution of residential air conditioning load to the statewide peak load (see Appendix D: 2005 Electricity Usage During Peak Periods), only air

conditioning actions were considered in these analyses. Table 8-1 summarizes the impact estimates from each of these surveys.

Table 8-1. Impact Estimates from 2006/2007 Evaluation Survey Results

Survey	Time Period Covered by Survey	Survey Conducted	Lower Bound (MW) (90% C.I.)	Estimate (MW)	Upper Bound (MW) (90% C.I.)
Baseline	Summer 2006	Spring 2007	2	32	63
Post-Event	August 2007	August-September 2007	93	289	495
Post-Summer	Summer 2007	Fall 2007	43	102	166

8.1.3 Analysis of 2006/2007 Residential Interval Load Data

The three California electric IOUs all provided residential customer-level interval load data. These data are from customers that are not aware that they are being monitored; the customers comprised a random, stratified sample. The data provided for each customer included:

- a reference number unique to each customer;
- 15 minute, 30 minute, or hourly interval load data for each summer (June – September) day in 2006 and 2007; and
- a climate zone, zip code, or other geographic identifier.

Only customers that were not part of any other demand response program—such as air conditioner cycling or peak time rebate programs—were considered. Thus, the only demand response program these customers were exposed to was Flex Alert, and any demand response identified in the data on Flex Alert event days could be assumed to be a result of the Flex Alert campaign.

Econometric analyses (including panel and aggregate) of these data were conducted to identify reductions in expected load during Flex Alert hours. The overwhelming conclusion from these analyses was that the baseline residential demand could not be determined with enough precision to identify diversion from this baseline (i.e., impact) of the magnitude anticipated by the 2006/2007 evaluation survey results.[35] This result does not imply that the 2006/2007 Flex Alert impact is insignificant, only that it is unobservable in whole-house and aggregate residential data. This result is not surprising, given that only approximately 1% to 8% of residences are responding to a given Flex Alert (2007 post-event survey), and that these respondents are not known with certainty.

At the onset of the 2006/2007 evaluation, the idea of surveying residents in the IOUs' load research samples was discussed. This would have enabled impact estimates from surveys to be calibrated to actual load data and would control for two sources of uncertainty: engineering estimate uncertainty (i.e., impact per respondent) and self-reporting bias. However, this approach was dismissed

[35] This problem arises in part because most Flex Alert events are on very hot days, leaving few very hot days to develop a baseline from; therefore, baseline loads on very hot days need to be estimated primarily from days that are not as hot.

because it would have violated the IOUs' objective of unobtrusive observation, i.e., customers who knew that they were being observed might behave differently than if they did not know.

An independent analysis of the 2006/2007 residential interval load data was conducted after the 2006/2007 evaluation and similarly concluded that 1) no impact was observable, and 2) baseline demand could not be forecasted with enough precision to identify DR signals of the relatively small magnitude anticipated. Based on these conclusions, the Summit Blue evaluation team decided that an examination of 2008 residential interval load data was not worthwhile.

8.1.4 Conclusions from 2006/2007 Analysis

The three estimate approaches taken all complemented one another. The CAISO analysis framed the system-wide demand response on Flex Alert event days (~200 to 1100 MW) and illustrated the limited extent to which baseline behavior – even in large aggregate – could be forecast. The survey analyses estimated an impact of 2 to 63 MW in 2006 and 93 to 495 MW in 2007; reasonable fractions of the system-wide aggregate response. The interval load analysis concluded that any impact of the Flex Alert campaign is too small to identify from whole-house, population data; the impact estimated by the survey analysis suggests an impact of a magnitude that would be too small to identify. Only the survey analysis resulted in conclusive estimates (~30 to 300 MW), albeit with the caveat that customer responses may not have reflected their true actions. Note that this effort focused on air conditioning response and did not attempt to calculate effects from turning off unnecessary lights or shifting appliance use.

Both the CAISO and residential interval load data analyses illustrated that forecast error is relatively large and makes the relatively small expected Flex Alert impact signal difficult or impossible to detect.

8.1.5 Update to 2007 Post-Event Estimate

Results from the 2008 survey and impact estimate were used to revise assumptions made in the 2007 post-event impact estimate. Specifically, the assumed air conditioner load impact per household during event hours in which the household was responding to an event was reduced from 0.60 kW to 0.12 kW. This reduction is primarily due to an assumption in 2007 of a six degree thermostat setback, whereas 2008 post-event survey results showed an average closer to three degrees. Furthermore, the 2007 estimate assumed load reduction behavior well synchronized with the actual hours of the event (3 PM to 7 PM), whereas many respondents adjusted their thermostats earlier than 3 PM, resulting in reduced impact by the time of the event started. This effect is described in Section 8.5. The revised impact estimate for the 2007 post-event survey are 45 to 75 MW of demand response from air conditioner load reduction.

8.2 2008 Survey Design

Only a post-event survey was planned for the 2008 Flex Alert evaluation. Design of this survey gave considerably more attention to impact estimation than did the 2006/2007 evaluation surveys, primarily to estimate air conditioning load impact more accurately and to estimate lighting load impacts. The complete survey instrument is provided in Appendix A: Post-Event Survey Instrument.

8.2.1 Focus on Lighting and Air Conditioning

Air conditioner and lighting loads were the focus of this analysis because they are significantly larger than residential appliance loads during the weekday afternoon and evening hours targeted by Flex Alert messaging. Appendix D: 2005 Electricity Usage During Peak Periods provides an estimate by the California Energy Commission (CEC) of end-use electricity demand during peak periods in the summer of 2005. Of the 54 GW peak load, 22 GW (40%) was estimated to come from the residential sector. Of this 22 GW:

- 11 GW (21% of the statewide peak) was from air conditioning.
- 3.6 GW (7% of the statewide peak) was from miscellaneous end-uses, which includes lighting, fans, and electronics.
- 1.2 GW (2% of the statewide peak) was from electric dryers.
- 0.33 GW (<1% of the statewide peak) was from dishwashers.
- 0.14 GW (<1% of the statewide peak) was from washing machines.
- 5.7 GW (11% of the statewide peak) was from end-uses not targeted by the Flex Alert campaign, including cooking, refrigeration, and swimming pools.

8.2.2 Demographics

Demographic questions were asked in order to deduce baseline air conditioning loads. For a given indoor temperature preference, cooling loads are dependent on the size of the home, the climate conditioning efficiency of the home, and the type and efficiency of air conditioner used. The following questions were asked in the survey to deduce these properties.

- Question 25 - Type of home
- Question 26 - Type of air conditioning
- Question 27 - Square footage of home
- Question 28 - Home vintage

These questions were taken directly from the Residential Appliance Saturation Survey[36] as a means of comparing the intentionally biased sample[37] obtained for the 2008 Post-Event survey to a deliberately less biased sample, and to provide a basis for weighting post-event survey results by respondent if need be. Using questions for RASS additionally provided a means for deducing relevant information not directly asked in post-event survey, such as air conditioner vintage.

8.2.3 Timing and Frequency

For lighting and air conditioner measures, the following questions captured the timing and frequency (number of days out of the past 10 days) of these actions.

- Question 14 – Start hour of action

[36] The California Residential Appliance Saturation Survey, conducted by KEMA, can be found at http://websafe.kemainc.com/RASSWEB/DesktopDefault.aspx.

[37] As discussed in Section 2.2, the sample was designed to oversample in DMAs with high saturations of central air conditioning, to maximize the precision of the impact estimates.

- Question 15 – End hour of action
- Question 16 – Frequency of action

Many respondents reported long action durations for turning off light bulbs – often carrying over into the next day. It was assumed that many of these lights would have normally been turned off anyway during the late night and early morning hours. Although this does not affect Flex Alert impact results (which only concern the afternoon and evening hours), the impact estimation was a 24 hour model, and it was appropriate to apply a scaling factor to impact results for late night and early morning hours.

8.2.4 Lighting

Respondents who reported turning off lights were asked how many lights they turned off, and what type.

- Question 17 – Number of light bulbs turned off
- Question 18 – Type of light bulbs turned off

8.2.5 Air Conditioning

Respondents who reported using less air conditioning or turning off air conditioning (including those who reported going to a public, air conditioned space) were asked the following questions:

- Question 19 – Normal thermostat setting
- Question 20 – Thermostat setting during Flex Alert action

8.3 Adjustments to Reported Frequency of Actions

Although the Flex Alert event was only three days long, most respondents reported taking actions for more than three days. Impacts from respondents who reported taking action for more than three days were computed by first assuming a 100% response rate to Flex Alerts and then scaling down these results by the scaling factors listed in Table 8-2. This scaling was done to decrease the impact estimated from respondents whose actions did not align with the Flex Alert messaging (i.e., conserve energy on *specific* days) and were likely responses to messaging other than the Flex Alert. Partial credit, rather than no credit, was applied because it is conceivable that respondents did interpret the Flex Alert messaging as a general conservation message, or one specific to hot weather. For example, if a respondent reported taking action six out of the last ten days, then their impact estimates are one half (0.5) of the impact estimate for the respondent who responds to every Flex Alert.

Table 8-2. Impact Scaling Factor for Erroneous Frequency Reporting

Reported Frequency (days out of the last 10)	Impact Estimate Scaling Factor
1	1
2	1
3	1
4	1
5	0.75
6	0.5
7	0.25
8	0.25
9	0.25
10	0.25
11	0.25

8.4 Lighting Model

Impact from respondents who reported turning off lights was computed by multiplying the assumed wattage of light bulbs by the number of lights turned off during each hour of reported action. This impact was scaled down for respondents who reported taking action on a greater number of days than the three days of the event.

$$Impact(hour) = \frac{Bulbs * Wattage * Action(hour)}{min(3, Frequency)} * FrequencyScaleFactor$$

where

- *hour* is the hour of the three day event {1,..,72}
- *Impact(hour)* is the hourly impact (in kW)
- *Bulbs* is the number of bulbs reported in Question 17
- *Wattage* is the assumed wattage per bulb (Table 8-3)
- *Action(hour)* is a binary value set to one (1) if the respondent reported taking action at this hour, zero (0) otherwise. These values may be different on different days of the event if respondents reported starting an action on one day that carried over to the next day.
- *Frequency* is the number of days of action reported in Question 18 {0,…,11}
- *FrequencyScaleFactor* is the scaling factor (Table 8-2)

Table 8-3. Assumed Wattage per Bulb

Type of Bulbs	Watts per Bulb
Incandescents	60
CFLs	15
Combination of CFLs and Incandescents	35

DMA-wide impact estimates were developed by extrapolating the individual estimates from respondents in each DMA to the number of households in each DMA. Individual impact estimates were the average hourly impact estimate from 3 PM to 7 PM (the Flex Alert event hours) during the three days of the event.

$$DMAImpact = AvgImpact * NumberOfHouseholds * p$$

where

- *DMAImpact* is the estimated Flex Alert impact (MW) during the hours of 3 PM to 7 PM
- *AvgImpact* is the average impact per respondent in the DMA from the event hours of 3 PM to 7 PM who turned off lights
- *NumberOfHouseholds* is the number of households in the DMA
- *p* is the portion of the survey population with a non-zero estimated impact from turning off lights

A confidence interval for this extrapolation was determined by the uncertainty in the estimate of the percentage of the population responding. This uncertainty was estimated by assuming that the composition of Flex Alert respondents in the population followed a binomial distribution; then, the portion of the population with a non-zero estimated impact from turning off lights, *p*, is the same as that found in the survey and the standard error of this estimate is:

$$St.Error = \sqrt{\frac{p*(1-p)}{n}}$$

where

- *p* is the portion of the population with a non-zero estimated lighting impact during the Flex Alert hours (3 PM to 7 PM)
- *n* is the number of respondents in the survey.

This standard error[38] is then used to compute the 90% confidence interval on the estimate of *p*. The average value of non-zero impact values was assumed for each non-zero respondent throughout the confidence interval.

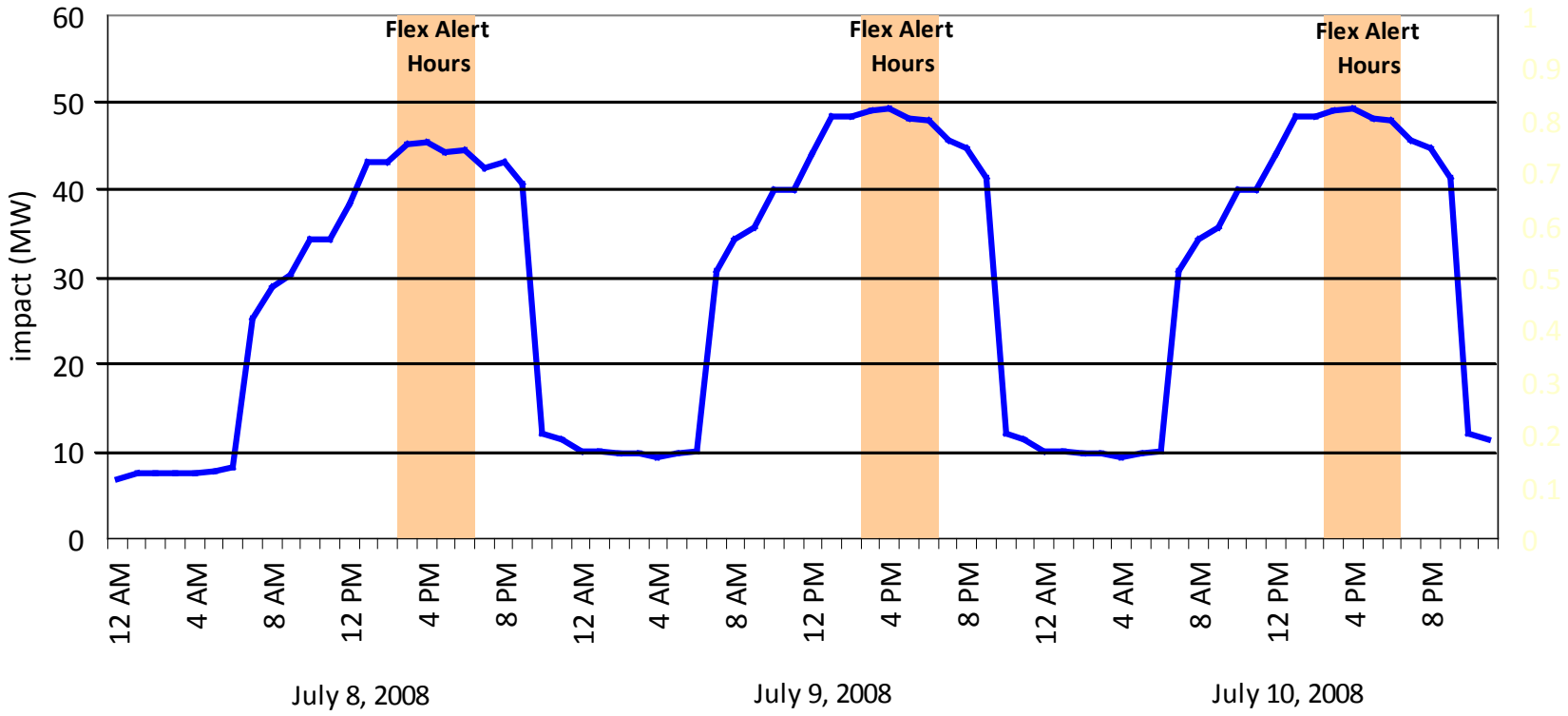
This analysis resulted in an estimated 47 MW (90% confidence interval of 40 MW to 55 MW) of demand response statewide from turning off lights. Table 8-4 states the impact estimate from turning lights off by DMA and statewide. Figure 8-1 shows the hourly impact estimate over the course of the three day Flex Alert event.

[38] This estimate of the standard error can be inaccurate when p is small (such as this case), but was deemed to be adequate for this basic analysis.

Table 8-4. Lighting Impact Estimate Results

									Percent Non-Zero Respondents During Event Hours		Average Estimated Impact During Event Hours (MW)		
DMA	Number of Households	Number of Respondents	Average Non-Zero Impact Per Respondent (kW) - 3 PM - 7PM	Impact Per DMA (MW) 3 PM - 7 PM	Number of Non-Zero Respondents - Average During Event Hours	Percent Non-Zero Respondents During Event Hours	Standard Error	90% Confidence Interval	Lower Estimate	Upper Estimate	Lower Impact Estimate (MW)	Estimate (MW)	Upper Impact Estimate (MW)
Los Angeles	4,948,872	401	0.036	19.9	45	11.2%	1.6%	2.6%	8.6%	13.8%	15.3	19.9	24.5
San Francisco-Oakland-San Jose	2,311,020	157	0.055	11.3	14	8.9%	2.3%	3.7%	5.2%	12.7%	6.6	11.3	16.0
Sacramento-Stockton-Modesto	1,070,761	131	0.039	6.3	20	15.3%	3.1%	5.2%	10.1%	20.4%	4.2	6.3	8.4
San Diego	937,886	142	0.041	2.7	10	7.0%	2.1%	3.5%	3.5%	10.6%	1.4	2.7	4.1
Fresno-Visalia	548,512	104	0.022	1.5	13	12.5%	3.2%	5.3%	7.2%	17.8%	0.9	1.5	2.2
Palm Springs	515,332	153	0.040	2.1	16	10.5%	2.5%	4.1%	6.4%	14.5%	1.3	2.1	3.0
Monterey-Salinas	234,828	31	0.057	0.9	2	6.5%	4.4%	7.3%	0.0%	13.7%	0.0	0.9	1.8
Bakersfield	221,059	46	0.039	0.9	5	10.9%	4.6%	7.5%	3.3%	18.4%	0.3	0.9	1.6
Santa Barbara-Santa Maria-San Luis Obispo	215,181	33	0.039	1.5	6	18.2%	6.7%	11.0%	7.1%	29.2%	0.6	1.5	2.5
Chico-Redding	156,524	32	0.008	0.1	3	9.4%	5.2%	8.5%	0.9%	17.9%	0.0	0.1	0.2
Statewide	**11,159,974**	**1230**	**0.053**	**47.3**	**97.5**	**7.9%**	**0.8%**	**1.3%**	**6.7%**	**9.2%**	**39.8**	**47.3**	**54.9**

Figure 8-1. Statewide Flex Alert Impact from Turning Lights Off



note: Flex Alert event hours are from 3 PM to 7 PM

8.5 Air Conditioning Model

Determining the impact from respondents who reported reducing air conditioner loads (i.e., using less air conditioning, using no air conditioning, and going to public air-conditioned spaces) required the use of a thermodynamic model.[39] The wide range of climate zones, home sizes, home vintages, and thermostat settings suggested a large range of individual impacts. Furthermore, the timing of air conditioner actions was significant, because the transient impact of raising a thermostat setpoint is larger than the steady state impact. That is, the load impact during the first hour or two when the air conditioner turns off and the home temperature floats to the higher setpoint temperature is larger than the load impact once the home temperature has stabilized at the higher setpoint temperature and the air conditioner turns on again, albeit at a lower level. A simple heat transfer model was developed for this purpose and is discussed in Appendix F: Dynamic Residential Air Conditioner Load Model.

The thermodynamic model was run twice: once using the normal thermostat setpoint at all hours, and once using the Flex Alert action setpoint at reported action hours and the normal setpoint at all other hours. The difference between these two sets of load results is the Flex Alert demand impact for air conditioning. Note that the savings is not always a positive number, for example at the end of an action period, when a respondent returns their thermostat to the normal, lower setting and the air conditioner load increases to return the home to the lower temperature (i.e., the "snapback" phenomenon). The end of the action period can be in the middle of an event, for example if a respondent raised their thermostat setpoint only until particular family members arrived home, e.g. from work or school.

The results of the thermodynamic model were then scaled down based on the respondent's reported number of days of action, as in the Lighting Model.

$$Impact(hour) = \frac{ThermodynamicModel(hour)}{minimum(3, Frequency)} * FrequencyScaleFactor$$

where

- *hour* is the hour of the three day event {1,..,72}
- *Impact(hour)* is the hourly impact (kW)
- *ThermodynamicModel(hour)* is the hourly air conditioner load reduction (W) for a given respondent, based on their reported timing of action, thermostat setpoint levels, climate zone, and building characteristics, as determined by the thermodynamic model.
- *Frequency* is the number of days of action reported in Question 18 {0,…,11}
- *FrequencyScaleFactor* is the scaling factor (1, 0.75, 0.5, 0.25, see Table 8-2)

The majority of respondents who reported reducing air conditioner load were single family homes with central air conditioning. The heat transfer model used was developed assuming this situation. Adjustments were made to responses from other types of homes in order to apply the heat transfer model to them:

[39] Data from the KEMA Residential Appliance Saturation Study was used to calibrate this model. http://websafe.kemainc.com/RASSWEB/DesktopDefault.aspx.

- **Evaporative coolers** – Evaporative coolers were assumed to have a SEER rating four times that of the equivalent refrigerative central air conditioner.[40]
- **Window AC units** – Window units were assumed to have a SEER rating of 10. The home area of any respondent with a window AC unit was adjusted to 400 square feet because window units only serve a portion of a home.
- **Homes other than single family homes** – Homes that were not single family homes were assumed to have the same thermal properties as single family homes for the purposes of this analysis.

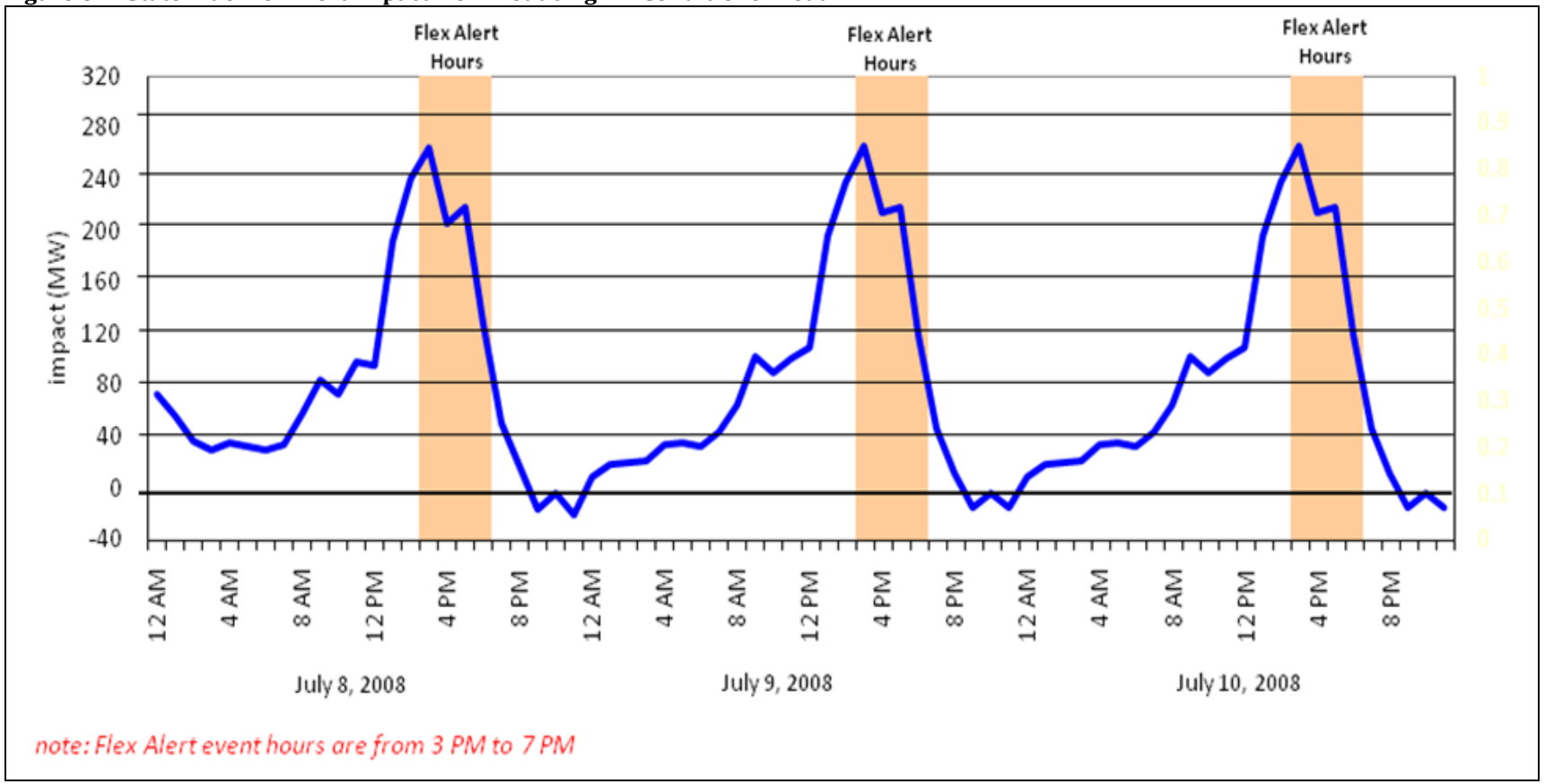
This analysis resulted in an estimated hourly average impact of 204 MW (90% confidence interval [176 MW, 234 MW]) of demand response statewide during the hours of 3 PM to 7 PM from reduced air conditioner loads. Table 8-5 states the impact estimate from reducing air conditioning loads by DMA and statewide. Figure 8-2 shows the hourly impact estimate over the course of the three day Flex Alert event. Note that although the impact estimate is the *average* across all Flex Alert event hours, the impact varies quite significantly across these hours, from an estimate of 266 MW at 3 PM to 119 MW at 7 PM.

[40] http://apps1.eere.energy.gov/consumer/your_home/space_heating_cooling/index.cfm/mytopic=12360

Table 8-5. Air Conditioning Impact Estimate Results

									Percent Non-Zero Respondents During Event Hours		Average Estimated Impact During Event Hours (MW)		
DMA	Number of Households	Number of Respondents	Average Non-Zero Impact Per Respondent (kW) - 3 PM - 7PM	Impact Per DMA (MW) 3 PM - 7 PM	Number of Non-Zero Respondents - Average During Event Hours	Percent Non-Zero Respondents During Event Hours	Standard Error	90% Confidence Interval	Lower Estimate	Upper Estimate	Lower Impact Estimate (MW)	Estimate (MW)	Upper Impact Estimate (MW)
Los Angeles	4,948,872	401	0.228	101.1	36	9.0%	1.4%	2.3%	6.6%	11.3%	74.6	101.1	127.5
San Francisco-Oakland-San Jose	2,311,020	157	0.204	45.0	15	9.6%	2.3%	3.9%	5.7%	13.4%	26.8	45.0	63.2
Sacramento-Stockton-Modesto	1,070,761	131	0.084	21.4	31	23.7%	3.7%	6.1%	17.6%	29.8%	15.8	21.4	26.9
San Diego	937,886	142	0.348	16.1	7	4.9%	1.8%	3.0%	1.9%	7.9%	6.3	16.1	25.9
Fresno-Visalia	548,512	104	0.098	6.7	13	12.5%	3.2%	5.3%	7.2%	17.8%	3.8	6.7	9.6
Palm Springs	515,332	153	0.167	14.6	26	17.0%	3.0%	5.0%	12.0%	22.0%	10.3	14.6	18.9
Monterey-Salinas	234,828	31	0.137	1.0	1	3.2%	3.2%	5.2%	0.0%	8.4%	0.0	1.0	2.7
Bakersfield	221,059	46	-0.077	-2.2	6	13.0%	5.0%	8.2%	4.9%	21.2%	-0.8	-2.2	-3.6
Santa Barbara-Santa Maria-San Luis Obispo	215,181	33	0.038	0.7	3	9.1%	5.0%	8.2%	0.9%	17.3%	0.1	0.7	1.4
Chico-Redding	156,524	32	0.079	0.4	1	3.1%	3.1%	5.1%	0.0%	8.2%	0.0	0.4	1.0
Statewide	**11,159,974**	**1230**	**0.187**	**204.9**	**120.9**	**9.8%**	**0.8%**	**1.4%**	**8.4%**	**11.2%**	**175.7**	**204.9**	**234.0**

Figure 8-2. Statewide Flex Alert Impact from Reducing Air Conditioner Load



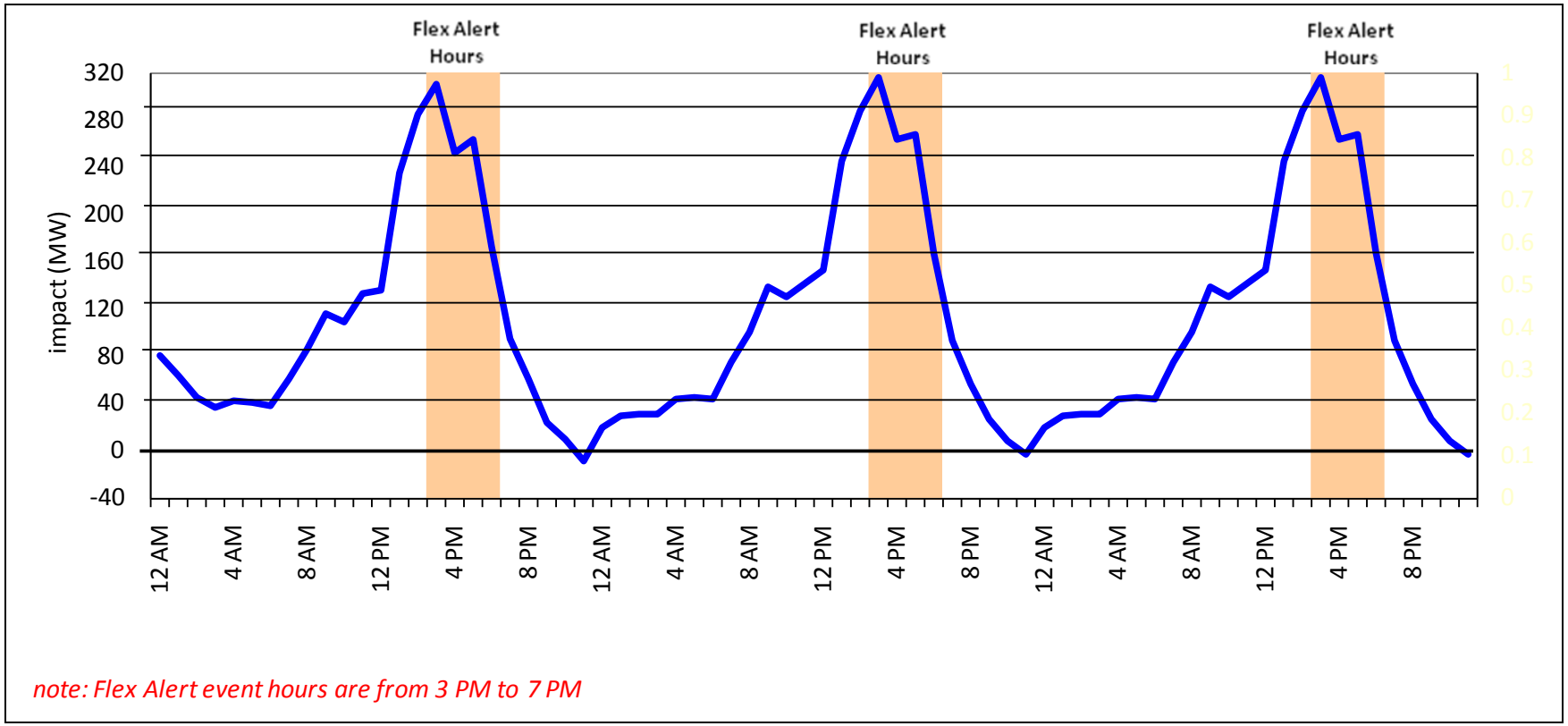
8.6 Combined Lighting and Air Conditioning Impact Estimation Results

The combined impact estimate of lighting and air conditioning actions is the sum of the two individual estimates: 252 MW (90% confidence interval [222 to 282 MW]). Error in the combined estimate was computed in accordance with the California Evaluation Framework. Table 8-6 summarizes the impact estimates for lighting, air conditioning, and the combined impact. Figure 8-3 shows the combined hourly impact for both actions. As discussed in Section 8.5, note that while the *average* impact over Flex Alert event hours (3 PM to 7 PM) is reported here, the hourly impact varies significantly, from 316 MW at 3 PM to 167 MW at 7 PM.

Table 8-6. Lighting, Air Conditioning, and Combined Impact Estimates

DMA	Lighting Impact Estimate (MW)			Air Conditioning Impact Estimate (MW)			Combined Impact Estimate (MW)		
	90% C.I. Lower Bound	Estimate	90% C.I. Upper Bound	90% C.I. Lower Bound	Estimate	90% C.I. Upper Bound	90% C.I. Lower Bound	Estimate	90% C.I. Upper Bound
Los Angeles	15.3	19.9	24.5	74.6	101.1	127.5	94.1	121.0	147.8
San Francisco-Oakland-San Jose	6.6	11.3	16.0	26.8	45.0	63.2	37.5	56.3	75.1
Sacramento-Stockton-Modesto	4.2	6.3	8.4	15.8	21.4	26.9	21.8	27.7	33.6
San Diego	1.4	2.7	4.1	6.3	16.1	25.9	9.0	18.8	28.7
Fresno-Visalia	0.9	1.5	2.2	3.8	6.7	9.6	5.3	8.2	11.2
Palm Springs	1.3	2.1	3.0	10.3	14.6	18.9	12.4	16.8	21.1
Monterey-Salinas	0.0	0.9	1.8	0.0	1.0	2.7	0.6	1.9	3.2
Bakersfield	0.3	0.9	1.6	-0.8	-2.2	-3.6	-2.8	-1.3	0.3
Santa Barbara-Santa Maria-San Luis Obispo	0.6	1.5	2.5	0.1	0.7	1.4	1.1	2.3	3.4
Chico-Redding	0.0	0.1	0.2	0.0	0.4	1.0	0.1	0.5	0.9
Statewide	**39.8**	**47.3**	**54.9**	**175.7**	**204.9**	**234.0**	**222.1**	**252.2**	**282.2**

Figure 8-3. Statewide Flex Alert Impact



note: Flex Alert event hours are from 3 PM to 7 PM

Section 7.1 noted the difference in response rates between respondents in relatively high temperature climate zones (higher response) and relatively low temperature climate zones (lower response). This comparison was extended to the impact analysis and concludes that respondents in higher temperature climate zones also had a larger impact *per respondent* (0.144 kW) than respondents in the lower temperature climate zones (0.070 kW). This difference can be explained by the greater *potential* for savings in hot climates because of higher air conditioner presence and loads. These results are summarized in Table 8-7, where a *non-zero likelihood* respondent is one whose impact estimate averaged over the Flex Alert hours is non-zero.

Table 8-7. Comparison of Per Person Impact in Relatively Hot and Relatively Cold Climate Zones

Temperature Category	Number of Respondents	Number of Non-zero Likelihood Respondents	Percent of Respondents with Non-zero Likelihood	Impact Per Non-zero Likelihood Respondent - Average (kW)	Impact Per Non-zero Likelihood Respondent - 90% Confidence Interval (kW)
Lower average temperatures (lower than 90 degrees)	502	69	14%	0.070	0.052 to 0.086
Higher average temperatures (90 degrees or higher)	728	153	21%	0.144	0.103 to 0.184

8.7 Conclusions from Impact Estimation

This impact estimate of 222 to 282 MW is in agreement with and strengthens the conclusions from the 2006/2007 impact estimate. This section highlights the most significant findings and observations.

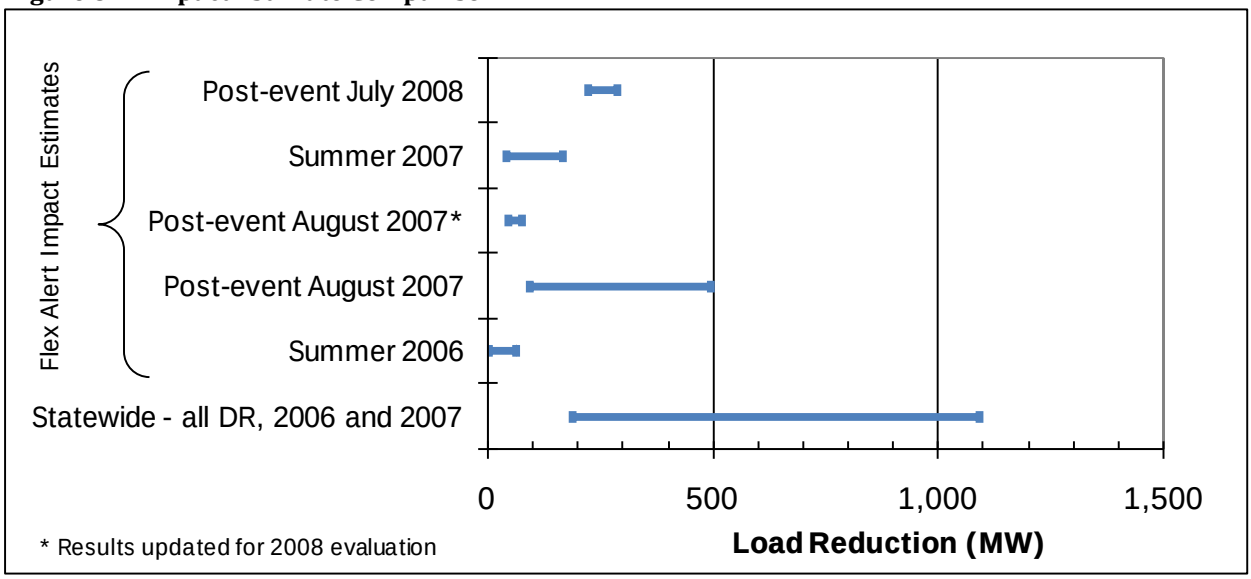
8.7.1 Impact Estimate

The impact estimate for the 2008 Flex Alert campaign is 222 to 282 MW. The reduction in error of estimate from the 2007 post-event survey analysis to the 2008 analysis is primarily due to doubling the sample size in 2008, and selecting proportionate DMA sample sizes that minimized the expected error of the estimate (i.e., assigning sample sizes in proportion to air conditioner population within each DMA).

Figure 8-4 compares the impact estimates from the 2008 evaluation (post-event July 2008) to the three estimates from the 2007 evaluation (summer 2007, post-event August 2007, and summer 2006), the revised post-event August 2007 results[41], and finally to the observed statewide demand response from all demand response programs on Flex Alert days in 2006 and 2007. The increase in impact from the revised 2007 post-event survey to the 2008 post-event survey is due to an increased percentage of respondents reporting taking action and doing so at the correct times.

[41] As discussed in Section 8.1.5, the 2007 post-event survey analysis was re-run using updated assumptions on per-household impacts based on responses regarding thermostat setpoints from the more detailed 2008 post-event survey.

Figure 8-4. Impact Estimate Comparison



8.7.2 Survey Deployment

The survey design specified 1,200 completes. This was only possible over the span of ten days, whereas, ideally, the entire survey would be conducted in single day, immediately after one of the Flex Alerts. However, completing that many surveys in a single day, on only one day's notice, is not feasible given the staff size of a typical survey implementer, and would therefore be prohibitively expensive to conduct. With a ten-day span, frequency responses are difficult to interpret: here we have assumed that respondents reporting three days of Flex Alert actions responded on the correct days, but it is possible that they did not. Also, most respondents reported taking action *more than* three days out of past ten. This misinterpretation of the Flex Alert message adds subjectivity to survey interpretation.

8.7.3 Significance of Lighting

The intuition to include lighting in the impact estimation this year proved correct: the impact from lighting actions (40 to 55 MW) was approximately 1/6 of the total impact.

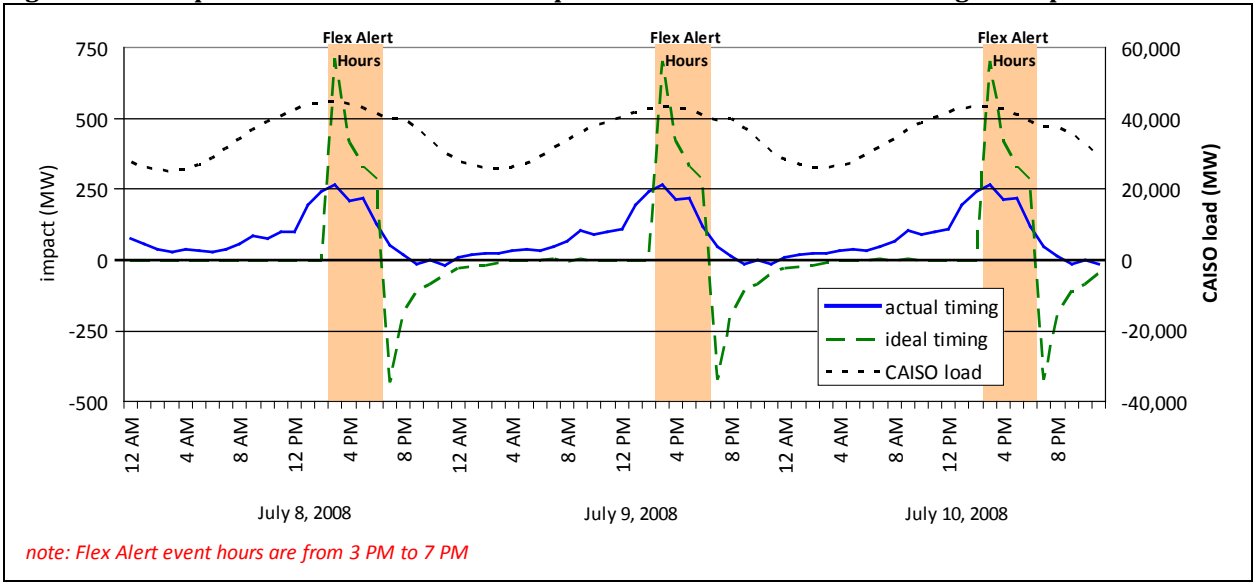
8.7.4 Action Timing

Many respondents misunderstood the time-specificity of the Flex Alert message, reporting taking action for entire weeks or seasons, or at the wrong times of day. However, the large majority of program impact does occur at the peak hours of the day. The impact analysis identified that the relatively cool nighttime and morning temperatures in most of California result in air conditioners not turning on until later in the day, regardless of setpoint.

To examine the impact of respondents not all reducing air conditioner loads at the suggested times, the impact estimate model was rerun, assuming all respondents who reduced air conditioner loads did so precisely from 3 PM to 7 PM. The statewide hourly impact of this scenario is compared to the actual air conditioner impact estimate in Figure 8-5. This "ideal" behavior would nearly triple the impact during the first hour of the event (704 MW under the ideal scenario, 266 MW under the

actual scenario); this difference in impact would decay over the course of the event (at 7PM, there is an impact of 280 MW in the ideal scenario and 119 MW in the actual scenario). The difference in impact is the opportunity cost of households either misunderstanding the targeted Flex Alert hours or being unable or unwilling to respond exclusively at the Flex Alert hours.

Figure 8-5. Comparison of Air Conditioner Impact from Ideal and Actual Timing of Response



The "snapback" effect of everyone putting their thermostats back to their normal settings exactly at the end of the event (7 PM) would be quite dramatic: 424 MW of load *increase* in the hour following the event. For reference, the CAISO statewide load for the Flex Alert event is also plotted in Figure 8-5. Note that the CAISO statewide load is also decreasing from 3 PM to 7 PM, suggesting the that decreasing hourly impact profile observed is quite desirable. However, also note that the large snapback effect in the ideal timing coincides with the local peak or plateau on the CAISO system during the evening. There is reason to believe that this local peak/plateau is increasing due to increased household plug loads as described for PG&E loads in Kanellos (2008).[42]

8.7.5 Addressing the Overstatement of Positive Actions

As discussed in the 2006/2007 evaluation, self-reported overstatement of positive actions is an observed phenomenon, yet difficult to quantify.[43] This challenge has generally created large skepticism in the energy community for using surveys to estimate energy savings estimates.

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[42] Michael Kanellos. "Peak Power Developing a Second Hump Because of Computers." *Greentechmedia:blogs.* Posted October 16, 2008. http://greenlight.greentechmedia.com/2008/10/16/peak-power-getting-a-second-hump-because-of-computers-662/.

[43] For example, Hagler Bailly (1999) includes results of a California statewide residential telephone survey on energy efficiency devices and behavior and an on-site verification of approximately 10% of the sites. Of the sites verified, significant over- and under-reportings were both identified. Unplugging or removing a second refrigerator was the only measure in the survey that did not involve acquiring new equipment (such as compact fluorescent light bulbs or energy-efficient windows) and provides the most direct comparison to Flex Alert measures. The results of the on-site verification are illuminating: 2% of sites said that they had unplugged/removed a second refrigerator, and were verified. Eight percent of sites said that they did this measure, but on-site verification did not confirm this. 85% of sites said that they did *not* do this, and that was verified on-site. Five percent said that they did not do this, but on-site inspection showed that they *had*.

One method of correcting for overstatement would be to conduct *two* post-event surveys: one after a heat wave that did not result in Flex Alerts, and one after a Flex Alert. The survey conducted when no Flex Alert occurred would serve as the baseline response to such a survey.

Combining a survey with residential interval load data is a possible solution to this issue, and is worth discussion, given the difficulties in accurately estimating Flex Alert impact from either of these approaches individually. In order to avoid influencing respondents' behaviors, the surveys would have to be conducted after an event. The end of the survey would ask for respondents' permission to access their load data from their utility. Responses could then be checked against load data; while the Flex Alert impact is unobservably small relative to the entire residential load, impact at individual homes would be large enough to observe (the challenge of identifying which homes to examine would be addressed by using the survey to preselect customers to sample). The deployment of advanced metering infrastructure (AMI) in California may make interval load data more readily available.

9. CONCLUSIONS, RECOMMENDATIONS, AND NEXT STEPS

The following sections highlight the major conclusions and recommendations coming out of this evaluation report.

9.1 Conclusions

Conclusions coming out of the review of communications from the Flex Alert campaign and media coverage include:

- A noticeable improvement occurred in message consistency among the Flex Your Power, CAISO, and IOU communications, compared to the message consistency during the August 2007 Flex Alert (discussed in Summit Blue's 2007 evaluation report). Each entity used the term "Flex Alert," although some also added the phrase "Conservation Alert." The SCE and SDG&E websites used the proper "Flex Alert: Save Energy Now!" logo. The CAISO website featured a "Conserve-o-Meter" which pointed to "Needed" during most of the Flex Alert, but there was no Flex Alert logo or conservation tips.

- While there has been significant improvement in the consistency of the IOU websites' display of the alert message, there is still room for improvement. Each IOU website displayed that an alert was in effect; however, some of the alerts were cluttered amongst other messages and did not "jump off" the page. Both the PG&E and SDG&E websites linked directly from their home page to the Flex Your Power website where conservation tips are provided, but there was little suggesting to the visitor that they should click on those links to find the conservation tips. The SCE website did encourage visitors to "learn more," a link that took them to another page within the SCE website, but the conservation tips were buried in a relatively text-heavy page.

- While the FYPower.org website is a strong resource for energy efficiency education and tips, the website is not fully accessible during critical times. Several times during the Flex Alert period, Summit Blue staff was unable to access the Flex Your Power website, suggesting higher traffic than the website could manage.

- The email and text messaging channels do not appear to be working as intended. While individual email subscribers received notification of the Flex Alert event, corporate email subscribers did not receive a unique corporate email; nor did text message subscribers receive any message at all. The email notification that went to subscribers had fewer details than the email that was sent through the "Send the Alert to a Friend!" mechanism on the website. Also, the "friend" emails did not list the three conservation actions, but directed the reader to the Flex Your Power website for more details.

- There was significant media coverage of the Flex Alert during the beginning of the week when the Flex Alert was "breaking news," but over the course of a three-day Flex Alert, the number of TV news stories on the topic declined significantly. Nevertheless, one can conclude that the decline in news coverage reasonably reflected the changing

circumstances, as temperatures did not reach the highs expected in many regions and demand remained under control.

- There was a wide variation in the number of TV news stories by network affiliation. ABC affiliates showed significantly more stories related to the Flex Alert than did the other stations (about 9.2 stories per station). In contrast, the FOX affiliates showed about 4.1 relevant stories per station over the course of the Flex Alert event.

- The media generally represented the intentions of the Flex Alert campaign accurately, using the correct "Flex Alert" terminology and focusing on the three major requested conservation actions: set thermostats to 78 degrees or higher, turn off unneeded lights, and wait until after 7 PM to use major appliances. This is in marked contrast to what was observed in the 2007 evaluation, when the news media used widely varying and potentially misleading terms to describe the event.

- Online activity (e.g., blogging) related to the Flex Alert concept unsurprisingly increased dramatically during the July 2008 Flex Alert, but remains relatively insignificant for a large statewide event. Many of the sources were news stories or simple repostings of the Flex Alert announcements without much commentary, but a few blog posts started a dialogue regarding FYP and energy policy. This type of online presence represents a strong opportunity for engaging with citizen journalists to humanize the event, e.g., sharing success stories and experiences with the Flex Alert event.

Conclusions from the process interviews include:

- The program implementer stated that the 2008 Flex Alert campaign was not modified significantly from the 2007 campaign, but some of the recommendations from the 2007 evaluation were implemented and more changes are in store for the 2009 campaign. The campaign did place increased emphasis on educating inland California residents, in response to the recommendation from the 2007 evaluation to focus on the regions with higher temperatures and higher saturations of air conditioners.

- The CAISO representative indicated that CAISO values the Flex Alert campaign as one tool to keep electricity supply and demand in balance when unforeseen events such as heat waves, wildfires, transmission problems, and forced outages threaten the reliability of the power grid. The Flex Alert campaign will continue to gain credibility by issuing alerts sparingly (avoiding the appearance of "crying wolf") and by using positive messaging that reinforces the positive outcomes of the campaign.

Conclusions from the focus groups include:

- Consumers advised that the messages incorporate more "relatable" scenarios and information in order to increase the likelihood of inducing action. "Make the message relatable" was a clear mantra not heard last year. People argued that relatability can be increased using either a negative (consequences of inaction) or a positive (little things that matter without hardship) frame.

- The primary take-away from both the Flex Alert and the Reminder/Thank You ad was generally to save energy and conserve. Consistent with last year's findings, the immediate *and finite* timeframe is not getting across well for the Flex Alert. Many respondents felt the

purpose of the Reminder message was to increase consciousness and self-analysis of own energy usage behavior.

- Quantification is strongly desired across all respondents. Consumers would like to know the amount of money/energy California saved on a given Flex Alert day. Alternatively, some argued that the message should cast the desired actions as a benchmark, so one can compare their own behaviors to the benchmark. They want their choices explained and to understand what power-using devices are equivalent – e.g., running a load of laundry = cooling a room of Y by Z dimensions, or a microwave a dinner = X # hours of TV. This way, tradeoffs can be assessed.

- Using community notions to spur participation is powerful, but has to be more about everyone being in this together (including corporations as part of the community and doing their part) versus generically invoking "pride." Communal efforts imply that everyone is doing their part and the sacrifice is being spread around, which is different from pride. A local community feel makes the requested actions also feel more doable and makes impacting global warming a more concrete and believable claim.

- Many people do not understand how electricity is produced or how it is supplied. The concept that the grid is interconnected is far less understood in this year's focus groups than the ones conducted last year in the three largest cities of California. Respondents lacked the knowledge to link how electric power is created with the concept of global warming. The same was seen in the blogs about Flex Alerts. This is partially why the message created such a disconnect for most people to have both short-term blackouts and long-term global warming in the same message.

- Text message alerts have definite merit as a medium to communicate the alerts because text messaging is on the rise (particularly among the target audience of women) and the immediacy of text messages will allow the alerts to reach consumers at the precise time that conservation is needed.

- The 2007 evaluation revealed that members of the higher educated, environmentally aware group to which Flex Alert media buys are aimed frequently feel they are tapped out, i.e., there is a strong belief that they are already doing all they can to save energy. The focus groups were designed to explore other possible segments who may be receptive to energy conservation but who have not fully adopted energy-saving behaviors as part of their daily lives. Three hypothesized segments that emerged in the 2008 focus groups: the choir, reluctant converts, and financially driven converts. Each group has core beliefs and attitudes that drive the most compelling message to prompt compliance with the behaviors requested by the Flex Alert messaging.

Conclusions from the post-event survey results include:

- A large percentage (61%) of all respondents recalled seeing some type of energy conservation advertisement, alert, announcement, or other type of message in the past 10 days. Most often, these messages were seen on TV (43% of respondents who saw a message). Just 13% heard the energy conservation message on the radio, and another 10% read about it in the newspaper. About half of the TV messages recalled were advertisements and the other half were part of news broadcasts.

- About 23% of respondents associated the message they saw with the phrase "Flex Alert"; another 19% associated it with "Flex Your Power" or "Flex Your Power NOW!" Nearly half of respondents did not think that a program name was associated with the message that they saw, and 12% recognized non-Flex alert names such as "Energy Alert" or "Conservation Alert."

- When the ads were described to them, 17% of respondents specifically recalled the Flex Alert TV ad and 11% recalled the Flex Alert radio ads. There were no statistically significant differences in Flex Alert recall between large and small DMAs. The aided recall of the Flex Alert TV ads is significantly higher than the 2007 post-event survey results.

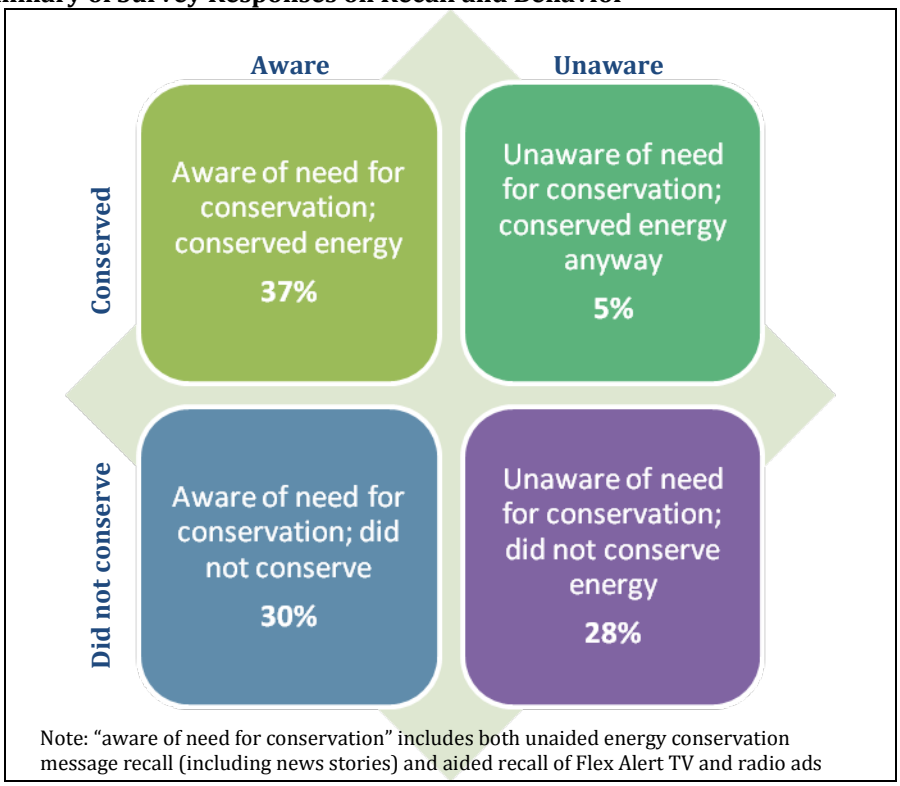
- Overall, 67% of respondents recalled some sort of energy conservation message or the Flex Alert (unaided and aided recall combined). Respondents had good recall of the requested conservation actions.

- Less than half of all respondents who recalled an energy conservation message understood that conservation is needed at particular times of day, and even fewer were able to correctly identify those times of day. Very few respondents understood that conservation was especially needed on particular days; the majority of respondents who reported taking conservation actions said that they did so on ten out of the previous ten days, when the Flex Alert period only lasted three days. Given that the Flex Alert messaging uses a global warming appeal, it is unsurprising that some respondents are interpreting the call for energy conservation as an ongoing, long-term need.

- Respondents who specifically recalled the paid Flex Alert advertisements (as opposed to other energy conservation messages or news media coverage of the event) had statistically significantly higher recall of the requested actions as well as the requested time period for which conservation is needed. Over one-quarter (28%) of respondents who recalled the Flex Alert advertisement reported waiting until 7 PM to use appliances, compared to 21% of those who only recalled another type of energy conservation message or just heard about the Flex Alert on the news. These findings suggest that the campaign's paid advertisements are able to communicate the essential details about the Flex Alert more clearly than the news media coverage.

- Just over half (55%) of those respondents who recalled a message or alert (including both paid advertisements and news media coverage) reported taking conservation actions in response to the message. This translates to 37% of all respondents. Five percent of all respondents did not recall any energy conservation message but conserved energy anyway, and 28% did not recall any relevant messages and did not conserve energy (Figure 9-1). Respondents who saw an alert or message, but did not conserve (30% of all respondents) often reported that they did not conserve because they don't have air conditioning and therefore "there's nothing I can do," or that they are "already doing all we can do."

Figure 9-1. Summary of Survey Responses on Recall and Behavior



Note: "aware of need for conservation" includes both unaided energy conservation message recall (including news stories) and aided recall of Flex Alert TV and radio ads

- The Flex Alert campaign reaches several different types of consumers, with distinct motivations and behaviors. Consistent with the program's marketing strategy, respondents who agreed with pro-environmental statements were more likely to report taking conservation actions than those who were neutral or disagreed with the pro-environmental statements. Less clear but in evidence is a distinction between those who act in their own self-interest (i.e., to save money on utility bills) and those who act more altruistically. Those who did not take Flex Alert-related actions are split between those who did nothing and those who believe they already are doing what they can. It may be possible to persuade a portion of the latter non-compliant segment that they can do "just a little more" by tapping into more aspects of community pride and cohesion where sacrifice is borne by all. Indeed, variations of "do a little more of what you already do" was a refrain in several focus groups this year.

Conclusions from the indirect impact analysis include:

- The impact estimate for the 2008 Flex Alert campaign is approximately 222 to 282 MW based on self-reported air conditioner and lighting behaviors. The impact from lighting actions (40 to 55 MW) was approximately 1/6 of the total impact estimate.

- The 2008 survey contained significantly more detail than the 2007 survey on timing of actions, setpoints, and building characteristics. This information was used to revisit assumptions made in the 2006/2007 estimate and consequently revised it downward to 45 to 75 MW (from 93 to 495 MW, based on the post-event survey), due to lower than assumed per household impact. This suggests a significant increase in impact in 2008, due to higher portions of responses translating into quantifiable demand savings. Both the revised

2006/2007 estimate and the 2008 estimate suggest a sizable demand response impact from this non-resource program.

- Timing of conservation actions has a significant effect on the demand response impact. To examine the impact of respondents not all reducing air conditioner loads at the suggested times, the impact estimate model was rerun, assuming all respondents who reduced air conditioner loads did so precisely from 3 PM to 7 PM. This "ideal" behavior would nearly triple the impact during the first hour of the event; this difference in impact would decay over the course of the event, but the ideal scenario impact remains greater than the actual scenario during all event hours. The difference in impact is the opportunity cost of households either misunderstanding the targeted Flex Alert hours or being unable or unwilling to respond exclusively at the Flex Alert hours.

- Respondents in higher temperature climate zones (those with average high temperatures of over 90 degrees during the Flex Alert) were more likely to respond to the Flex Alert *and* had a larger average impact per respondent (0.144 kW) than respondents in lower temperature climate zones (0.070 kW). This difference can be explained by the greater potential for savings in hot climates because of higher air conditioner loads.

9.2 Recommendations

- If substantial modifications are made to the 2009 program design, a process evaluation should be run concurrently with the campaign to more efficiently document and assess the new implementation strategy.

- FYP, CAISO, and/or other entities such as the IOUs should issue a series of press releases over the course of a multi-day event to encourage continued media interest in the story, because the news media's coverage of the event decreased significantly over the alert period.

- In order to make the news stories more consistent, a precise media kit should be sent to each network affiliate in advance of the summer season, identifying clearly the source of the problem that's necessitating a Flex Alert, the three main conservation actions that should be taken, and the times conservation is required.

- The Flex Alert campaign should attempt to persuade television news stations to use the Flex Alert logo during relevant news stories, similar to how Bay Area TV news stations display the Spare the Air logo during the relevant portion of their broadcasts during Spare the Air events. Images of the logo should be included in the media kit.

- The quantitative review of TV news media coverage revealed that certain stations aired far more relevant news stories than others. The Flex Alert campaign should reach out to those stations (particularly FOX affiliates) which aired fewer relevant stories and convince them of the importance of covering the Flex Alert event. This could be accomplished by encouraging the media to run success stories of everyday people taking conservation actions. The focus group findings emphasize the need for accentuating the local community pride concept through highlighting neighborhood-level human interest stories.

- Engaging with authors of online and social media who discuss the Flex Alert would provide the campaign with an opportunity to participate in the conversation, correct misperceptions, and add suggestions for conservation activities. Blogs and message boards are ideal venues for providing information on the Flex Alert campaign that can spread virally. Additionally, the immediacy of microblogging (e.g., Twitter) provides an opportunity to share information about the alert quickly and this new form of social media should be explored for the campaign.

- The websites for the IOUs and CAISO should encourage visitors to continue on to the Flex Your Power website and/or provide energy conservation tips on their own website. The SDG&E and PG&E websites did have links to the Flex Your Power website, but did not specifically prompt visitors to click on the links for energy conservation tips. It is also important to highlight the specific hours during which conservation is most needed. These Flex Alert messages should be placed on the IOU websites the day before the alert if possible, to provide time for families to plan their energy conservation actions in advance of the event.

- Corporate subscribers for emailed Flex Alert notifications did not receive tailored notifications for this event; and text message subscribers did not receive alerts. The Flex Alert campaign should consider making use of these cost-effective communications channels. Text messages are instantaneous, so the message could hit at the appropriate time to maximize the likelihood of load reduction at the critical time.

- Focus group and survey respondents continue to struggle with the concept of conservation being especially needed on specific days (i.e., Flex Alert days), not just during specific times of day; and many do not correctly identify the times of day either. The Flex Alert campaign and associated entities (CAISO, the IOUs) should endeavor to further emphasize that conservation is needed *today* and *during specific hours*, in both the advertisements and in statements to the news media.

- The Flex Alert campaign and partners (e.g., media and IOUs) should be encouraged to avoid focusing too heavily on air conditioner turn-down behaviors, because some survey respondents who were aware of the Flex Alert reported that they did not do anything because they don't have air conditioning. This was also seen in the review of blogs about the Flex Alerts. Furthermore, being able to benchmark one's action relative to other actions that he/she could take (i.e., running a load of laundry vs. microwaving dinner) allows people to assess tradeoffs and make choices regarding their energy using behavior.

- On a similar note, it's important that Californians living in cooler climates understand that even if they aren't suffering from a heat wave, if other regions in the state are, the entire power grid is threatened. Additional education on this topic may be warranted.

- Ways of incorporating a mix of personally relatable consequences and proactive positive behaviors should be considered for future advertising messages.

- In order to increase compliance with the Flex Alert among a broader subset of the population, it may be worth exploring targeting groups that are not already conserving or environmentally motivated. Many respondents reported feeling that they are already doing all that they can to conserve energy. A true segmentation strategy with different appeals and possibly media buys for each identified segment of interest could be explored. There

are two distinct attitudinal segments of non-responders: those who already conserve but do no more on Flex Alert days than on other days and those who just don't conserve. Distinct messaging is needed to appeal to these different segments.

- Although we understand the hesitation to introduce cost savings into the messaging due to concerns about snapback, many survey respondents and focus group participants indicated that reducing energy costs is a major concern, especially in light of the current U.S. financial outlook. Framing a portion of the Flex Alert appeals in those terms may help capture the attention of additional segments.

9.3 Recommendations for Future Research

- To better address the potential overstatement of self-reported actions in the impact analysis (as discussed in Section 8.7.5), future evaluations could utilize two post-event surveys: one after a heat wave that did *not* result in Flex Alerts, and one after a Flex Alert. The survey conducted when no Flex Alert had occurred would serve as the baseline, representing those respondents who either conserve regularly during heat waves or every day or report taking actions that they did not actually take.

- Future evaluators should investigate opportunities to combine post-event survey data with survey respondents' interval load data to address this issue of overstatement of self-reported actions. The deployment of advanced metering infrastructure (AMI) in California may make interval load data more readily available for a much larger number of households, most of whom would not be a part of the load research sample and would therefore not be guarded by the IOUs from obtrusive observation.

- Additional refinements to the survey instrument could further reduce uncertainty in the impact analysis. Since lighting accounted for approximately 1/6th of the total impact, additional details should be collected regarding lighting behaviors (e.g., add halogen lamps as a response option, collect details on the number of each type of light rather than just the total number of lights shut off, etc.).

- Further evaluation of the subscriber emails (as well as text messages if they are sent during future Flex Alerts) is warranted, with a particular emphasis on documenting and assessing the corporate outreach strategy intended for the 2009 campaign.

- Segmentation strategies such as those hypothesized in Section 6.5 should be explored to identify target audiences that may be more willing and able to conserve in response to Flex Alerts and to customize messages for those new targets. Current Flex Alert messaging targets environmentally aware Californians who are predisposed toward energy conservation, but survey and focus group research to date reveals that many in this segment believe they are already doing all they can. Further market research may identify strategies to convince this segment to take conservation one step further and/or additional segments that may respond better to other appeals (e.g., cost savings).

APPENDIX A: POST-EVENT SURVEY INSTRUMENT

Hello, my name is _____ and I'm conducting a short survey conducted for the California Public Utilities Commission. This is not a sales call. The questions that I have will only take about 10 minutes and your responses will be kept strictly confidential. Do you have a few minutes? [IF RESPONDENT ASKS, INDICATE THAT THIS SURVEY IS BEING CONDUCTED FOR A VARIETY OF UTILITY-RELATED ORGANIZATIONS.]

Q1. During the past 10 days, did you change anything about how you normally use electricity?

1. Yes
2. No (SKIP TO Q3)
3. Don't Know (SKIP TO Q3)
4. Refused (SKIP TO Q3)

Q2. Please describe what you did. [DO NOT READ LIST, RECORD ALL THAT APPLY]

1. Turn off unneeded lights
2. Set thermostat to 78 degrees or higher/Used less air conditioning
3. Turned off air conditioner
4. Use appliances after 7 PM (or in the evening)
5. Don't use appliances
6. Went to a public area that provides AC (e.g. mall, coffee shop)
7. Went out and took advantage of free public transportation (Spare the Air Day)
8. Used *more* air conditioning
9. Other (Please specify: _____)
10. Nothing
11. Don't know
12. Refused

Q2A. Why did you change your normal usage?

[OPEN END]

Q3. Do you remember hearing or seeing any advertisements, announcements, emails, word-of-mouth, or other notices about conserving electricity during the past 10 days?

1. Yes
2. No (SKIP TO Q8)
3. Don't Know (SKIP TO Q8)
4. Refused (SKIP TO Q8)

Q4. Where did you see or hear this message? [DO NOT READ LIST, RECORD ALL THAT APPLY]

1. Television
2. Radio
3. Emails
4. Text messages on cell phone
5. Flex Your Power website (fyp.org)
6. Utility website (SCE, SDG&E, PG&E)
7. Other website (please specify:_____)
8. Freeway message board (e.g., electronic "Amber Alert" sign)
9. Billboard
10. Newspaper
11. Magazine or business journal
12. Electric utility representative
13. Other (record verbatim) _____
14. Don't know
15. Refused

[IF Q4=1, CONTINUE TO Q5; IF Q4=2, CONTINUE TO Q5A, OTHERWISE SKIP TO Q6]

Q5. [IF Q4=1] Was the message you saw on television an advertisement or part of a news broadcast? [SELECT ALL THAT APPLY]

1. Advertisement
2. News broadcast
3. Other (please specify: _____)
4. Don't know
5. Refused

Q5A. [IF Q4=2] Was the message you heard on the radio an advertisement or part of a news broadcast? [SELECT ALL THAT APPLY]

1. Advertisement
2. News broadcast
3. Other (please specify: _____)
4. Don't know
5. Refused

Q6. Where were you when you first saw or heard the ad or announcement? [READ LIST, RECORD ONE RESPONSE]

1. At home
2. In the car
3. At work
4. At school
5. Other (specify: _____)
6. Don't know
7. Refused

Q7. Did the message that you saw mention a specific alert program? Did the ad mention… [READ LIST, ROTATE LIST, RECORD ALL RESPONSES]

1. No specific program
2. Energy Alert
3. Summer Saver
4. Flex Alert
5. Smart A/C
6. Flex Your Power NOW!
7. Conservation Alert
8. Power Watch Day
9. Summer Discount Plan
10. Flex Your Power
11. Other (please specify: _____)
12. Don't Know
13. Refused

Q8. Do you remember an advertisement <u>on TV</u> during the past 10 days with written words on a red background and a voiceover announcing that state officials had called a "Flex Alert"? [IF YES, CLARIFY WHETHER THIS IS THE SAME AD THEY'VE BEEN DESCRIBING OR A DIFFERENT ONE]

1. Yes, that is the ad I've been describing
2. Yes, but this is a different ad than what I've been describing [or this is the only message/alert they recall, if Q3=2, 3, or 4]
3. No
4. Don't Know
5. Refused

Q.8.A. Now what about the RADIO? Do you remember an <u>advertisement</u> on the <u>RADIO</u> announcing that state officials had called a "Flex Alert"? [IF YES, CLARIFY WHETHER THIS IS THE SAME AD THEY'VE BEEN DESCRIBING OR A DIFFERENT ONE]

1. Yes, that is the ad I've been describing
2. Yes, but this is a different ad than what I've been describing [or this is the only message/alert they recall, if Q3=2, 3, or 4]
3. No
4. Don't Know
5. Refused

[IF Q3=2, 3, or 4 <u>*and*</u> Q8 (OR Q8A) =3, 4, or 5, SKIP TO Q21; OTHERWISE CONTINUE TO Q9]

Q9. [IF Q3=1 or Q8OR Q8A=1 or Q8OR8a=2] Can you tell me what the message or alert you saw asked you to do? [DO NOT READ LIST, RECORD ALL THAT APPLY]

1. Turn off unneeded lights
2. Set thermostat to 78 degrees or higher
3. Use appliances after 7 PM(OR EVENING)
4. Don't use appliances
5. Other (Please specify: _____)
6. Don't know
7. Refused

Q10. When did the message or alert tell you to conserve electricity? Did it tell you to conserve... [READ ALL, RECORD ALL THAT APPLY]

1. Over the long-term? [SKIP TO Q12]
2. Seasonally? [SKIP TO Q12]
3. On a particular day? [SKIP TO Q12]
4. At a particular time of day? [CONTINUE TO Q11]
5. Other (Please specify _____) [SKIP TO Q12]
6. Don't know [SKIP TO Q12]
7. Refused [SKIP TO Q12]

Q11. [IF Q10=4] During what hours did the message or alert tell you to conserve electricity?

[RECORD START AND END HOURS, e.g., 2 PM to 5 PM]

1. Don't know
2. Refused

Q12. Please describe the actions you took in response to the message or alert that you saw. [DO NOT READ LIST, RECORD ALL THAT APPLY]

1. Turn off unneeded lights
2. Set thermostat to 78 degrees or higher/Used less air conditioning
3. Turned off air conditioner
4. Use appliances after 7 PM (or in the evening)
5. Don't use appliances
6. Went to a public area that provides AC (e.g. mall, coffee shop)
7. Went out and took advantage of free public transportation (Spare the Air Day)
8. Other (Please specify: _____)
9. Did not take any actions in response to alert
10. Don't know
11. Refused

[IF Q12=9, CONTINUE TO Q13. IF Q12=1, 2, 3, or 6, SKIP TO Q14. IF Q=4,5,7,8,10, or 11, SKIP TO Q21]

Q13. [IF Q12=9] Why did you <u>not</u> take any actions in response to the message or alert?

[OPEN ENDED]

1. Don't know
2. Refused

[AFTER Q13, SKIP TO Q21]

[IF Q12=1,2,3 or 6, ASK Q14, Q15, and Q16 for EACH choice]

Q14. [IF Q12=1, 2, 3, or 6] Think about when you [ANSWER from Q12]…Approximately what hour of the day did you start taking this action?
[RECORD HOUR, e.g. 2 PM]

1. Don't know
2. Refused

Q15. [IF Q12=1, 2, 3, or 6] Think about when you [ANSWER from Q12]…Approximately what hour of the day did you *stop* taking this action? [IF NECESSARY, CLARIFY THAT YOU MEAN TURNING LIGHTS BACK ON OR RETURNING THERMOSTAT TO PREVIOUS SETTING]
[RECORD HOUR, e.g. 2 PM]
1. Don't know
2. Refused

Q16. [IF Q12=1, 2, 3, or 6] Think about when you [ANSWER from Q12]…Out of the past 10 days, how many days did you take this action?
[RECORD # OF DAYS]
1. Don't know
2. Refused

[IF Q12=1, CONTINUE TO Q17. IF Q12=2, 3, or 6, SKIP TO Q19.]

Q17. [IF Q12=1] Approximately how many light bulbs did you turn off?

[RECORD # OF BULBS]
1. Don't know
2. Refused

Q18. [IF Q12=1] What type of light bulbs do you have in your home? [READ LIST, RECORD ONE RESPONSE]
1. Incandescent (traditional) light bulbs
2. Compact fluorescent light bulbs (CFLs)
3. A mixture of incandescent lightbulbs and CFLs
4. Other (specify: _____)
5. Don't know
6. Refused

[IF Q12=2, 3, or 6, CONTINUE TO Q19. IF Q12≠2, 3, or 6, SKIP TO Q21.]

Q19. [IF Q12=2, 3, or 6] What temperature do you normally keep your thermostat at during the summer?

[RECORD TEMPERATURE IN FAHRENHEIT]
1. Don't know
2. Refused

[IF Q12=3, SKIP TO Q21, IF Q12=2 or 6, CONTINUE TO Q20.]

Q20. [IF Q12=2 or 6] What temperature did you adjust your thermostat to in response to the energy conservation message or alert that you saw? [IF Q12=6] What temperature did you adjust your thermostat to when you left the house to go somewhere with free air conditioning?

[RECORD TEMPERATURE IN FAHRENHEIT]
1. Don't know
2. Refused

Q21. During the recent California heat wave, did you visit any websites to seek any additional information? If so, which ones?

[OPEN ENDED - LIST WEBSITES]
1. Did not visit any websites [SKIP TO Q23]
2. Don't know [SKIP TO Q23]
3. Refused [SKIP TO Q23]

Q22. [IF Q21=YES] What information were you looking for?

[OPEN ENDED]
1. Don't know
2. Refused

[NO MORE SKIP PATTERNS – REMAINDER OF QUESTIONS ARE ASKED OF ALL RESPONDENTS]

Q23. Tell me how strongly you agree with the following statements. 1 Strongly Disagree, 2 Somewhat Disagree 3 Neutral 4 Agree Somewhat 5 Strongly Agree

Q23a. Global warming is an important environmental issue.

Q23b. Conserving electricity today can stop or slow global warming in the future.

Q23c. I believe it is everyone's responsibility to conserve now to reduce global warming in the future

Q23d. I should do my part to help my fellow Californians.

Q23e. Comfort is more important to me than saving energy in my home.

Q24. Is anyone in your household at home on a typical summer weekday afternoon;(record all that apply)?
1. From 12:00 Noon – 2:00 PM
2. From 2:00 PM – 4:00 PM
3. From 4:00 PM – 6:00 PM
4. Refused

Q25. What type of home do you have? [READ LIST, RECORD ONE RESPONSE]
1. Single family home
2. Townhouse/Duplex/Rowhouse
3. Apartment/Condo, 2-4 units
4. Apartment/Condo, 5+ units
5. Mobile home
6. Other (specify: _____)
7. Don't know
8. Refused

Q26. What type of air conditioning do you have in your home? [READ LIST, RECORD ONE RESPONSE]
1. Central air conditioner
2. Room air conditioner
3. Evaporative cooler
4. No air conditioning
5. Don't know
6. Refused

Q27. What is the approximate square footage of your home? [READ LIST IF NECESSARY, RECORD ONE RESPONSE]
1. Less than 500 ft^2
2. 500 to 750
3. 751 to 1000
4. 1001 to 1250
5. 1251 to 1500
6. 1501 to 2000
7. 2001 to 3000
8. More than 3000

Q28. Approximately when was your home built? [READ LIST IF NECESSARY, RECORD ONE RESPONSE]
1. Prior to 1975
2. 1975 to 1978
3. 1979 to 1983
4. 1984 to 1991
5. 1992 to 1996
6. 1997 to 2001
7. 2001 to 2003
8. 2004 to present
9. Don't know
10. Refused

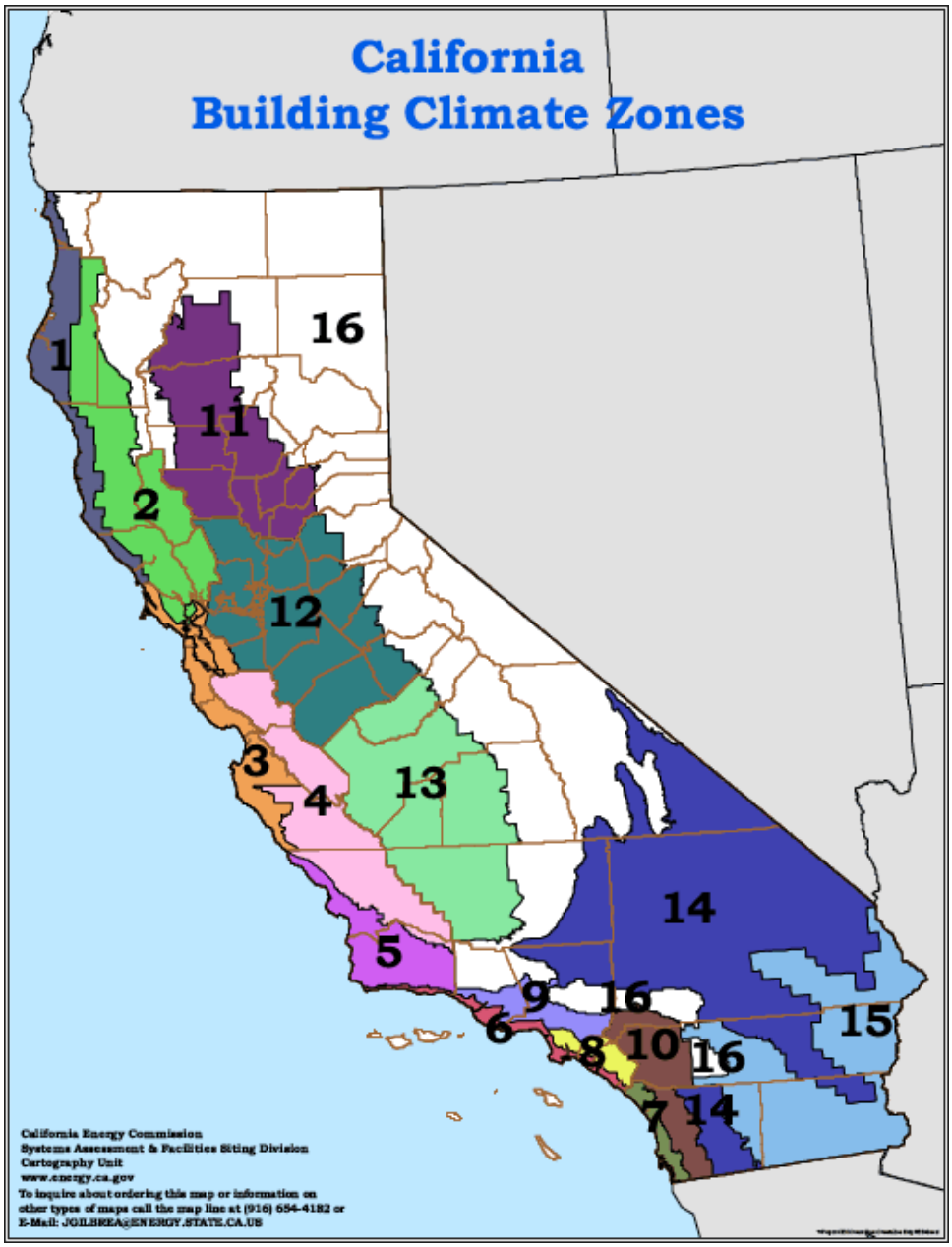
Q29. What is your typical monthly electric bill in the summer?

1. Less than 10 dollars
2. 10-49 dollars
3. 50 to 99 dollars
4. 100 to 199 dollars
5. 200 dollars or more
6. Someone else like a landlord pays my bill
7. No idea
8. Refused

Those are all the questions I have for you today. Thank you for taking the time to help us.

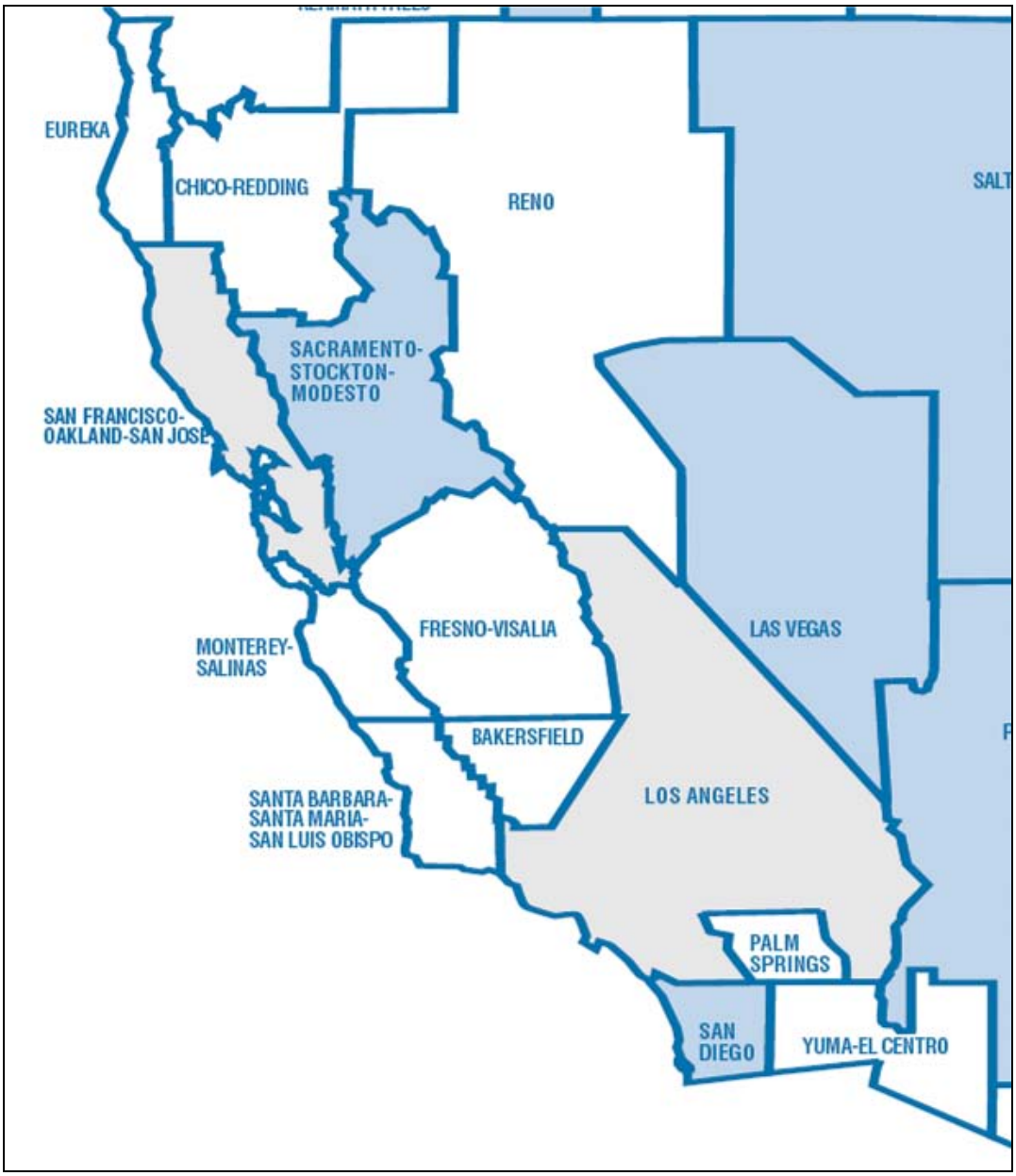
APPENDIX B: CALIFORNIA CLIMATE ZONE MAP

The following is a map of CEC building climate zones.



Source: California Energy Commission, *www.energy.ca.gov/maps/building_climate_zones.gif*

APPENDIX C: MAP OF CALIFORNIA DESIGNATED MEDIA AREAS (DMA)



Source: Nielsen Media Research

APPENDIX D: 2005 ELECTRICITY USAGE DURING PEAK PERIODS

	Megawatts	Percentage of Total
Commercial Sector	**20,907**	**39%**
Air Conditioning	7,690	14%
Cooking	120	0%
Exterior Lighting	63	0%
Hot Water	153	0%
Interior Lighting	6,171	11%
Office Equipment	277	1%
Other	3,489	6%
Refrigeration	978	2%
Space Heating	-	0%
Ventilation	1,967	4%
Residential Sector	**21,765**	**40%**
Air Conditioning	11,154	21%
Cooking	1,187	2%
Dishwasher	331	1%
Domestic Hot Water*	300	1%
Dryer	1,196	2%
Freezer	377	1%
Miscellaneous**	3,568	7%
Pools & Spas***	995	2%
Refrigeration	1,827	3%
Space Heating	-	0%
Television, Video, Satellite	544	1%
Washer	135	0%
Waterbed	153	0%
Industrial Sector	**7,415**	**14%**
Assembly	3,615	7%
Process	2,906	5%
Other	893	2%
Agricultural Sector	**1,959**	**4%**
TCU & Street Lighting	**1,973**	**4%**
Statewide Total	**54,020**	**100%**

Source: Demand Analysis Office, California Energy Commission. Available online at http://www.energy.ca.gov/electricity/peak_loads.html.

APPENDIX E: POST-EVENT SURVEY DATA CLEANING ASSUMPTIONS

As part of the impact estimation effort, the following assumptions were made in order to cleaning the survey response:

- **Start hour of action** (Question 14) – If an end hour of action was reported, but no start hour, then the start hour was assumed to be five hours prior to the end hour.
- **End hour of action** (Question 15) – If a start hour of action was reported, but no end hour, then the end hour was assumed to be five hours after the start hour.
- **Start and end hour of action** (Questions 14 and 15) – If both no start hour and no end hour of action were reported, then the impact of this respondent's actions was not evaluated.
- **Action frequency** (Question 16) – For respondents who reported taking action but did not report a number, an action frequency of one day was assumed.
- **Number of light bulbs turned off** (Question 17) – For respondents who did not report the number light bulbs turned off, three bulbs were assumed to have been turned off. Respondents who reported turning off more than 12 light bulbs were assumed to have turned off 12 light bulbs.
- **Type of light bulbs turned off** (Question 18) – For respondents who did not report the type of light bulbs turned off, a combination of incandescent and CFLs was assumed.
- **Thermostat settings** (Questions 18 and 19) - For respondents who reported using less air conditioning, but did not report an action thermostat setting, an thermostat setting increase of two degrees above the respondent's reported normal thermostat setpoint was assumed.[44]
- **Square footage of home** (Question 27) – Respondents who did not state a home size were assigned a home size category of 1500 to 2000 square feet.[45]

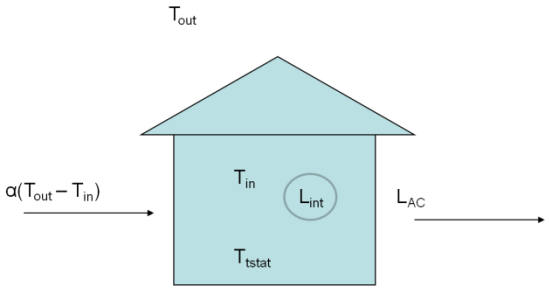
[44] This was the median thermostat setback of respondents who reported both normal and Flex Alert temperature settings. The average value was 3.2 °F.

[45] The average respondent home size was 1690 square feet.

APPENDIX F: DYNAMIC RESIDENTIAL AIR CONDITIONER LOAD MODEL

A linearized heat transfer model of a home was developed in order to dynamically model residential air conditioner load, as illustrated in Figure F-1. Thermal power entering the house is linearly proportional to the difference in temperature outside (T_{out}) and inside (T_{in}). Thermal power is generated inside the home from plug loads (L_{int}). Thermal power rejected from the house is equal to the cooling load provided by the air conditioner (L_{AC}). L_{AC} is determined by the thermostat setting (T_{tstat}) relative to T_{in}, and the air conditioner rated capacity (c).

Figure F-1. Thermodynamic Model of a Home



The temperature change of the building is then:

$$\frac{dT_{in}}{dt} = \frac{\alpha(T_{out} - T_{in}) + L_{int} - L_{AC}}{c}$$

Where

- T_{in} is the inside temperature (°F)
- t is the time (hours)
- α is the thermal conductance of the building (W/°F)
- c is the thermal capacitance of the building (W-hour/°F)
- T_{out} is the outside temperature (°F)
- T_{stat} is the thermostat setpoint (°F)
- L_{int} is the internal thermal power gain from plug loads (W)
- L_{AC} is the internal thermal power rejected by the air conditioner (W)

The variables α, c, and L_{int} must be assumed, based on building properties.

Thermal Conductance

Air conditioners are sized to meet the maximum expected load for a particular home. In this situation, dT_{in}/dt is zero, T_{out} is the design temperature, and T_{in} is the indoor temperature that the system is designed to maintain. If a home's air conditioner size is known, than α can be estimated from the maximum expected outside temperature, the assumed design indoor temperature, and the assumed internal loads. As part of the analysis conducted in KEMA's PG&E SmartAC impact

evaluation[46], data was collected on air conditioner tonnage, home size, and home vintage of participants in the PG&E residential SmartAC program. No significant variation in central air conditioner size with house vintage was identified. However, there was a significant correlation between home size and air conditioner size. Thus, α was estimated as a function of home size. The estimate values are reported in Table F-2.

Internal Heat Gain

L_{int} was assumed to be 0.5 Watts per square foot for all homes.

Thermal Capacitance

Previously developed residential building energy simulation models developed in eQUEST and appropriate to California building construction to deduce thermal capacitance as a function of home size. The eQUEST models were run assuming no active heating or cooling. These results were compared to the results of the thermodynamic model above (assuming no air conditioning load), in which c was adjusted to achieve the least squared error in hourly indoor temperature estimates. The estimate values are reported in Table F-2.

Table F-2. Thermal Conductance and Thermal Capacitance Values by Home Size

Home Size (square feet)	Conductance (Watts /°F)	Capacitance (Watt-hours/°F)
less than 500	250	1050
500 to 750	252	1219
751 to 1000	254	1406
1001 to 1250	256	1594
1251 to 1500	258	1781
1501 to 2000	261	2063
2001 to 3000	268	2625
greater than 3000	280	3750

Determining the Air Conditioning Savings Profile

The thermodynamic model was discretized, using a five-minute timestep. At each time step, L_{AC} was set to zero if the indoor temperature was less than the thermostat setpoint, and set to the estimated cooling capacity of the home air conditioner if not. Actual outdoor temperatures for each climate zone were obtained from the Weather Underground website.

L_{AC} was converted into electric load by assuming SEER values for air conditioners. SEER values were assumed to be a function of air conditioner vintage and were based on historic residential air conditioner efficiency standards. Although the post-event survey did not ask for air conditioner vintage, the RASS did. Using the assumed SEER/home vintage relationship, the average SEER value per home vintage in RASS was determined and applied to respondents in the post-event survey. The assumed SEER/home vintage relationship is stated in Table F-3. Note that air conditioners in

[46] KEMA, "Final Report: Pacific Gas and Electric SmartAC Load Impact Evaluation," April 2008.

homes built prior to 1978 have a higher SEER value than homes built between 1979 and 1991; this is most likely because these older homes are more likely to have recently replaced a burnt-out air conditioner unit than these new homes, therefore "leapfrogging" the new homes in air conditioner efficiency.

Table F-3. Assumed SEER Values

Home Vintage	Average SEER Value
pre-1975	10.4
1975-1978	10.1
1979-1983	9.9
1984-1991	9.8
1992-1996	10.1
1997-2000	11.2
2001-2003	13
2003-Present	13

APPENDIX G: REFERENCES FOR IMPACT ANALYSIS

California Energy Commission, "California Climate Zones by ZIP CODES," http://www.energy.ca.gov/maps/CLIMATE_ZONES_ZIPCODE.PDF.

California Energy Commission, "2005 Electricity Usage During Peak Periods," http://www.energy.ca.gov/electricity/peak_loads.html.

TecMarket Works, "California Evaluation Framework" June 2004.

Hagler Bailly, "CBEE Baseline Study on Public Awareness and Attitudes Toward Energy Efficiency" prepared for the California Board for Energy Efficiency, June 1999.

KEMA, "California Statewide Residential Appliance Saturation Survey" http://websafe.kemainc.com/RASSWEB/DesktopDefault.aspx.

KEMA, "Final Report: Pacific Gas and Electric SmartAC Load Impact Evaluation," April 2008.

KEMA-XENERGY, Itron, and RoperASW "California Statewide Residential Appliance Saturation Survey," California Energy Commission #400-04-009, June 2004.

The Weather Underground, http://www.wunderground.com.

APPENDIX H: FOCUS GROUP DISCUSSION GUIDE

Objectives:

- Awareness of and associations to Flex Alert and FYPN – both the logos and the programs
- Attitudes and self-assessed behaviors in response to the FYPN ads
- Explore beliefs about benefits and consequence of responding (or not) to FYPN alerts
- Gain insight into potential differences between homeowners vs. renters and varying degrees of environmental consciousness
- Gauge sentiments re. short-run vs. long-run lens used to frame conservation behaviors

Introductions **10 minutes**

Today we're going to talk a bit about energy use programs and communications used to talk about them

- Focus group logistics – explain glass, no cell phones, video recording
- Name, who's at home with you (kids, spouses, pets)
- Who is at home during the day?
- What kinds of big energy appliances do you run? (e.g., AC, pool pump, hot tub, etc.)

Conservation Program Awareness **15 minutes**

- Unaided – what energy conservation programs can you think of by name?
- Capture on flipchart – see what people know about each
- Show FYP and Flex Alert logos – aware? What associations have to each? Can you tell me about the program (if they believe the logo connotes a program)
- Probe on where/when saw ads, messages, alerts
- Is there an organization behind Flex Alerts? What is it? How do you know?
- Has anyone ever gone to www.fypower.org? Why? Probe on experience

Campaign Discussion **60 minutes**

NOTE: will counter-balance the 2 ads between owner/renter groups across the 3 cities.

First Reactions

- Once watched -- on the pad in front of you, jot down a number from 1-7 (1=not at all urgent and 7=highly urgent) and what you think is the main idea of the ad
- Capture the message comprehension, then get them to explain
- Following that discussion have them rate the ad 1-7 on how dynamic it is. Explain. Listen for any pros/cons to having the execution be test heavy

Dissect the ad's message

- What behavior is the ad trying to prompt? What do they hope you do and why? How is this different from your normal behavior (if at all)?
- What timeframe is implied in the ad? How do you know? Let's go back to the "urgency" ratings gave earlier. Capture on flipchart. Have people explain.
- What does "flex" mean?
- Define peak – what times does this mean to you?

Benefits/Consequences

- How do your environmental beliefs play out in the way you life your life?
- Why would someone choose to do what is asked? What is the motivation? Would you do what they asked? Why/why not?
- Who is this ad for? Describe their attitudes/behaviors normally.

Trigger Words

- What stood out in the ad? -- words, phrases, colors, tone, etc.
    - Probe on meaning?
    - Why did this pop for you? What did it trigger for you?
- If time, consider watching one more time – any other trigger words?
- Probe on the following if not come up naturally:
    - The right way to save California
    - Prevent blackouts today
    - Prevent global warming tomorrow
    - Threaten our state

Note: We know from last year that the first ad discussion is quite rich, but the similarities between the 2 make it impossible to add much with the second ad other than to generate comparisons between the 2. We will try to mitigate these issues by counter-balancing so we get a clean read at least 3 times for each spot.

Language Discussion **20 minutes**

Have the following on a sheet. Have them circle the ones they feel are relevant to the message conveyed in the ad. Capture and discuss.

- Heat wave
- Hedge against rising energy costs
- Wildfires burning
- Keeping utility bills under control
- Big drain on supply
- Right thing to do
- Time to act
- Just do a little bit more of what you normally do
- California connectedness
- Participate
- Use during peak demand
- Comply

- Why is the word/phrase relevant/important?
- Make a case for which ones you circled should find their way into the message – okay to make a few tweaks if you don't like the exact phrase
- Last thing going to do with all these word discussions is have you put them to use in telling the most compelling story you can. Based on all we've discussed so far, I want you to write 1-2 sentences – keep as short but as clear as possible. Your most compelling benefit story of why people should care, what they should do, and when they should do it, and what the benefit is.

FYpower.org **15 minutes**

- How many of you have ever gone to the site? Why? Opinions?
- Suppose text/email or company-wide alerts sent to you for Flex days

- Typically 1-5 year max
- Reminder of the program rationale and desire actions in the body of the email then send you to fypower.org for more information
- Does this affect your urgency rating? How so? Why?

- Could the benefit story you just told be used to convince you to sign up for the alerts?
- Is one form of the e-alert better than the other? Explain
- Look at the site and see if we can learn more about crafting TV messages
- Give them the fypower.org landing page and the Flex Alert page
  - Overall reactions?
  - Urgency rating?
  - Language you'd like to see carry over to other communications?

Miscellaneous Topics to Probe if Opportunity Arises

- Any possible confusion between the text-heavy ad format and a news bulletin
- If fast forwarding using a DVR/Tivo, would you see the message?
- Have stimuli ready of the outdoor/billboard Flex Alerts – get overall reactions, thoughts on purpose, thoughts on message – e.g., does it convey the message or does it merely serve to get you to remember the more elaborate message of the TV spot?

APPENDIX I: FOCUS GROUP CONSUMER STORIES

City/Time	Home	Story	Theme
Fresno 5:30	Owner	Conserve energy for future generations so others will enjoy the future. If we do not, there won't be a future to enjoy!	long term negative
Fresno 5:30	Owner	Grandfather and grand-daughter walking through a museum. Stop grandfather to ask what a polar bear is in an exhibit. He says, sweetheart that's a polar bear. If only we had done the right thing.	long term negative
Fresno 5:30	Owner	Global warming affects everybody. The right thing to do is to start where you can. The benefits will reward you and future generations to protect natural resources for you to use and see.	long term positive
Fresno 5:30	Owner	It's time to act for the future of your children. Conservation energy to prevent global warming	long term negative
Fresno 5:30	Owner	It's hard to see an elderly person unhook an oxygen tank and take a bus to the nearest cooling station or a single mother with a family of three pack her family to the community center for a cool down. Energy -- use only as much as you need.	short term negative
Irvine 5:30	Owner	Conserving energy can help all of us in more ways than one. (show examples, family, businesses, bills). For some, the cost savings from turning off lights and eliminating energy-abuse appliances can be a significant gain. In addition to turning off lights and disconnecting unused appliances, can help prevent rolling blackouts. Let's all in California, the sunshine state, try our best to continue to conserve energy.	short term positive
Irvine 5:30	Owner	With the high cost of energy, and limited supply, do the right thing. Use appliances during off-peak hours, be conscious of how you use your energy. Be part of saving both your money and everybody's energy	short term positive
Irvine 5:30	Owner	Save energy now! Keep your utility bills under control and save energy to prevent life threatening blackouts. Don't be a fool, flick it!	short term negative
Irvine 5:30	Owner	SCE is partnering with you. Here's what we're doing to make sure CA has a source of cheap energy that is available when you need it (list). As a partner, we're asking your help as well. Here are some ideas to conserve energy (list). Help us. Help California.	positive
Irvine 5:30	Owner	This is a message from the CA state energy department. Alert for all consumers, businesses, state, and government organizations. Please do what you can from July - October to conserve energy -- thermostats, appliances, lights, energy-saving bulbs, unplug whatever can be unplugged. By every home doing xyz, we can save xyz. Together let's keep the energy flowing for all.	mid term positive

Irvine 5:30	Owner	If every household and company in CA were to turn on all their lights, TVs, washers and dryers, dishwashers, DVDs, charge their phones, have an appliance or device on in every outlet turned on, the State of CA would run out of electricity in X hours. Do your part to help conserve energy, turn off and unplug unused devices. Some people count on it (show photos of hospital, respirators, police & fire stations, computers, phones, etc.)	short term negative
Fresno 7:30	Renter	Think by complying to the alert itself will help you out in the long run financially by keeping our utility bills under control. Staying in practice will make you pay attention to other costly things you spend on.	all about self
Fresno 7:30	Renter	People should care because it is their life and future that is involved. They should conserve and recycle willingly year round. Benefits are saving money and our future.	long term positive
Fresno 7:30	Renter	People should care and start conserving energy/power now. It is time to act. This is a serious issue facing our state and all people need to be aware and more conscious about keeping utility bills under control and saving energy to help us avoid blackouts that can very possibly threaten our state. During peak hours (follow the 3 things). Also during heat waves. The benefit is lower PG&E bills and no/less blackouts.	short term
Fresno 7:30	Renter	We should care because it affects our lives today and the future lives of our families. Make conscious choices to change behavior all the time. Benefit is uninterrupted power. Better tomorrow.	long and short positive
Fresno 7:30	Renter	Because as you know we have no time to waste, or extra money to spend on unnecessary use of energy. If you can save, why not? So, please think of this urgency seriously and start complying now. Benefits are extra money and less blackouts.	short term
Irvine 7:30	Renter	This year, by continuous compliance and alertness to the state's energy issues, we've (Californians) stepped up our contribution to the cause to join together and make a difference. By turning thermostats down, lowering out use during peak hours, using less power overall in our everyday life. We're stopped blackouts and power grid issues. By continuing these efforts, every one us can make a difference in the earth's global warming.	long term positive
Irvine 7:30	Renter	Saving energy at peak times helps save energy for all times. Turning off unnecessary appliances will help not only you, but others around you. If you don't need it, don't use it.	long and short positive
Irvine 7:30	Renter	California is currently experiencing a drain on our energy supply. The time to act is now to reduce the strain on our supply. Our compliance now and it the future is the right thing to do and will help keep the cost of energy to Californians down. Show families stating what they are doing to make a difference	short term positive

Irvine 7:30	Renter	By saving energy we can help ourselves and children and their future to be much brighter. It is very urgent to act now because of the threat of global warming. Global warming is a danger to all of us and our health and we can help buy saving energy. Saving our rainforest. Air quality, water quality, our environment	long term negative
Irvine 7:30	Renter	Power Alert! It's time for all of us to save energy now before it's too late. Prevent blackouts in your city. It's the right thing to do. Remember every little bit counts	short term positive
Irvine 7:30	Renter	Today we as Californians have a choice. We can choose to continue our ways and destroy the energy we have causing massing increase in our taxes and energy bills or we can do the little things. The 3 steps to help save our energy for today and the figure. Give the 3 things. Together we can make a difference and save California.	short term negative
San Diego 7:30	Renter	Red background with beeping in background. Emergency Energy Alert. Please be advised that (in a computer generated voice) that the state is in a disaster situation. We are experiencing an overage of power usage. Alert for 24 hours to cut back. We'll let people know when they can start using full power again. Go into what people can cut back on.	short term negative
San Diego 7:30	Renter	For the next 24 hours it is vital for everyone to participate. We are experiencing a big drain on our power supply. It's time to act now. Please comply with the following (list of whatever). Read a book, go for a walk, get some fresh air and exercise. go for a swim. do yoga. mediate. Turn off the TV	short term positive
San Diego 7:30	Renter	This is a Flex Alert and we are asking all Californians to participate in helping us to conserve energy now. (give the 3 things). By doing so, you are doing the right thing for all Californians today and tomorrow.	short term positive
San Diego 7:30	Renter	(created ad, not a story). Office scene of a man envisioning all he can do if he lands a big contract/deal. Flash to computer that dies out from lack of power. Arrives home from work to a steaming hot house. This could be your world. Concern Power Now. San Diego needs you to comply with Power Conservation for the next 24 hours. (give the 3 things)	short term negative
San Diego 7:30	Renter	What did you do today to help keep your lights on tomorrow? Stop tomorrow's blackouts today! Give the 3 things.	short term negative
San Diego 7:30	Renter	San Diego has entered into a state of Surge Alert. This means that energy consumption of businesses and households needs to drop by 17% in the next 24 hours or there is a strong likelihood that blackouts will occur. We need everyone's participation to avoid a crisis of blackouts. What can you do? (give the 3 things). If we all pitch in, this crisis CAN pass without incident. Please take action now. Thank you.	short term positive

APPENDIX J: COLLECTIVE INTELLECT SOCIAL MEDIA INSIGHT REPORT

Flex Alert Campaign and Associated Utility Analysis

Social Media Analytics - 06/01/08 to 10/01/08

Executive Summary with Key Findings /*Recommendations*

Overview: Collective Intellect analyzes social media content from blogs, news, and message board sites regarding variations of the terms "Flex Alert" and "Flex Your Power" (FYP), in the service of discovery around community engagement with the campaign and its language.

- Online activity before and after the July 8th Flex Alert was very low, especially when splog is removed from the data set. *This kind of rigorous metric reporting allows for more accurate ROI and is recommended going forward.*

- Online activity during the Flex Alert increased dramatically. The sources were, however, mostly news sites or simple re-postings of the alert without much commentary. *This indicates an strong opportunity for engagement with citizen journalists and bloggers to humanize the event, e.g., share their own Flex Alert success story or experience.*

- Activity levels waned quickly after the Flex Alert was over and returned to pre-alert levels. *The campaign has the potential to create and maintain "sustained buzz" through effective conversation and messaging that resonates with the core targets. Engagement tactics should be ongoing, authentic, and value adding, such as online surveys and reward programs.*

- Company-focused blog posts (such as Yahoo's Yodel) highlighting Flex Your Power messaging surfaced in our post analysis*. The continually increasing number of corporate blogs and associated employee readership potential provide an excellent opportunity to reach Californians effectively around this messaging while building corporate sponsorship and education possibilities.*

- During the reporting period, two posts in particular (found on slides 16/17) generated lively debates about FYP and energy policy in general. These posts not only mentioned the campaign website and the alert, but also offered opinions that engaged online readers. *This dialogue points to an opportunity around meeting the consumer at the "point of conversation." FYP can participate in this conversation/correct misperceptions/add suggestions, etc.*

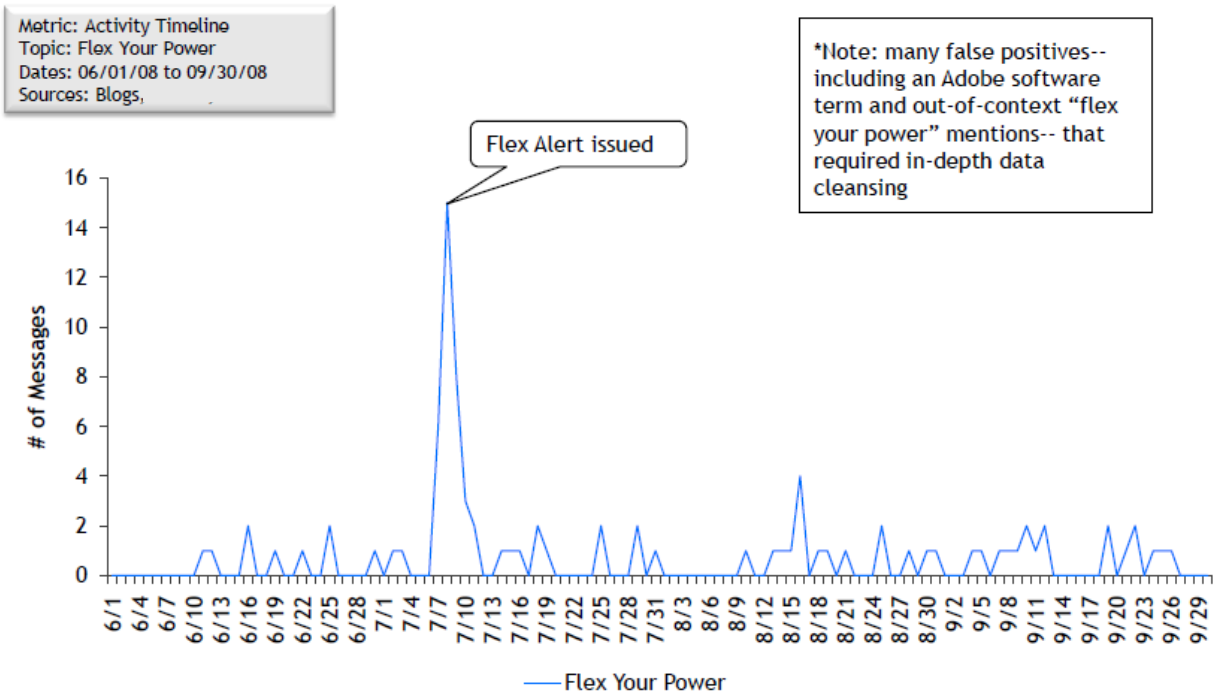
- Online activity mentioning FYP included many non-energy focused blogs, as well as "personal" blogs without any specific topic. *These blogs cluster around certain topics and can drive influencer list generation. Engaging with those authors on the resulting influencer lists provide effective and low cost PR/messaging opportunities .*

- Sentiment was generally positive due to FYP Awards and mentions of the FYP website as a good resource for energy saving tips. *This positive sentiment indicates a strong foundation for brand and campaign ambassadorship.*

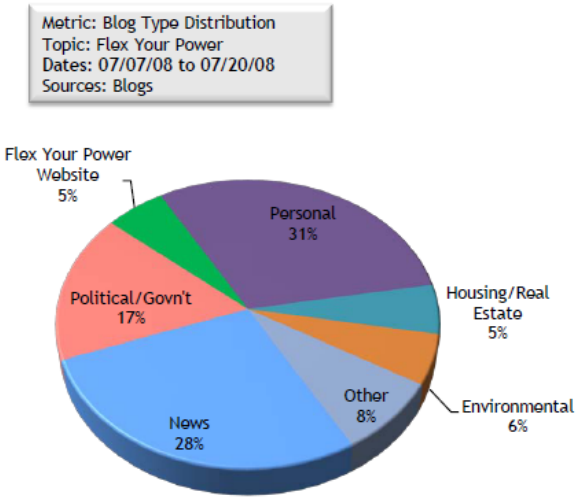
- More than half of all FYP-related messages occurred in social media. *Blogs and message boards are ideal venues for providing campaign information that can spread virally.*

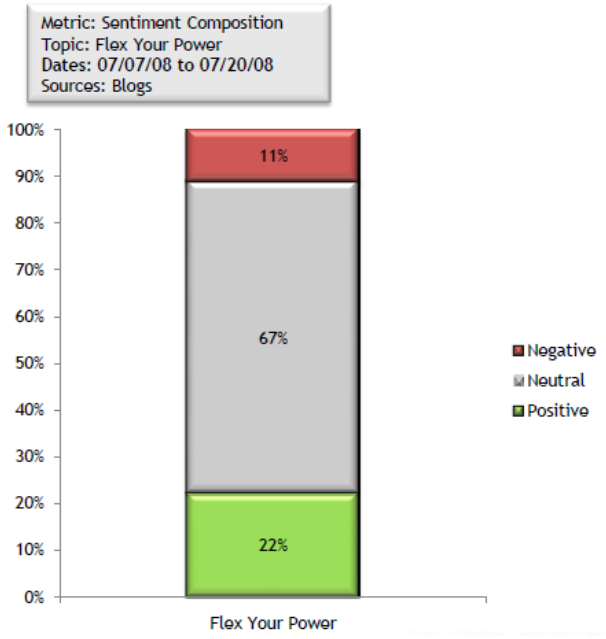
- Microblog (twitter) activity was not found. *Given the immediacy of the alerts, we believe this will be a key component to spread communication and recommend an analysis of twitter sources for 2009.*

Our Boolean search collected only posts related to "Flex Your Power" and "Flex Alert" in the context of California energy. As the graph demonstrates, online conversation quantity was low, with the exception of a spike during the 7/8 – 7/10 Flex Alert. For comparison, "Spare the Air" generated maximum nine blog post for any day surveyed. This number does not include news or board posts. (See graph below)

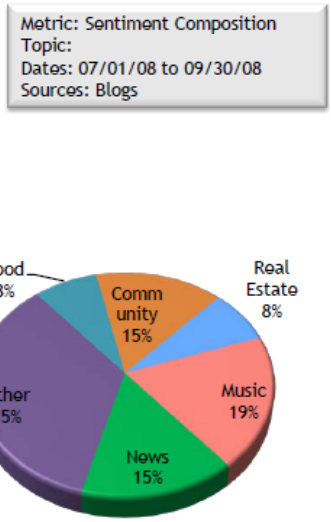


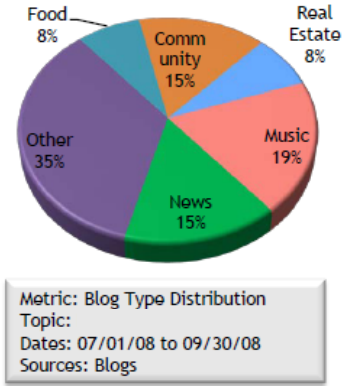
A further drill-down into blog activity immediately during and shortly after the Flex Alert event surfaces key insights. Mentions of the "Flex" terms were found most frequently in non energy-focused and personal blogs. *This information provides fertile opportunities for engagement, and can generate influencer lists for outreach.* (See graph below)

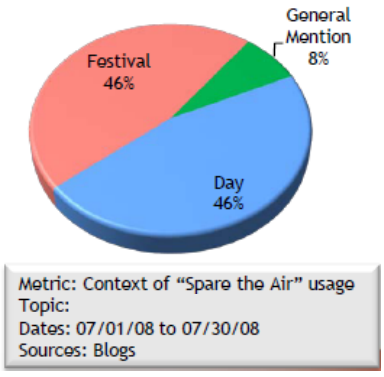




"Spare the Air" conversations also received light posting during the reporting period. As with "Flex Your Power," "Spare the Air" was most often mentioned in personal blogs that did not have specific foci. However, music blogs had a strong presence as bloggers discussed the Spare the Air Festival. The festival was the primary driver of positive sentiment. *This could be an insight regarding message/marketing partnerships for Flex Alerts.* (See graph below)







Verbatim comments using "alternative" language from topic generation list

During the Alert Period:

What I wrote…. http://sps.livejournal.com/573498.html 7/9/08

"I was just forwarded a copy of your email entitled **"Demand Response Program Event,"** which starts with the sentence, "We would like to inform you that the California Independent System Operator (CAL ISO) has called for a demand response event today, the event will start at 3 PM and end at 5 PM."

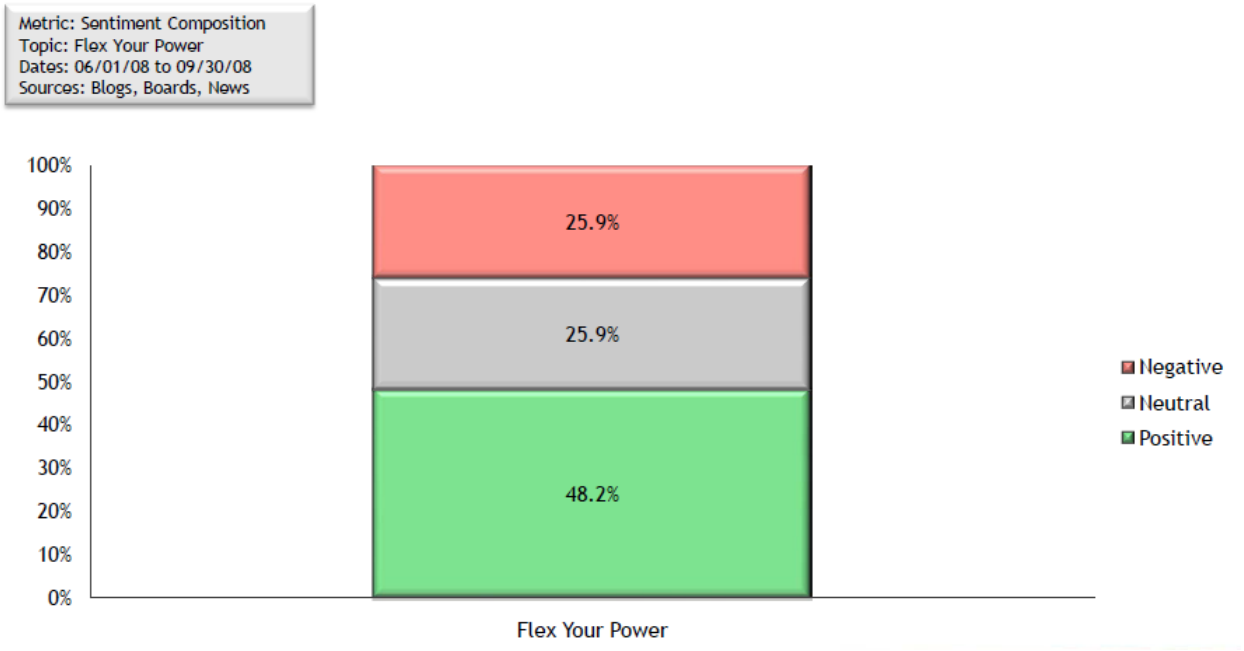
Perhaps my difficulty is that I am new to this area, and indeed to this country, but might I suggest that it would be easier to understand such a message—and thus to respond to it appropriately—if it were entitled, let us say, "Electrical Shortage Today"? Neither the subject nor the first line of the message contains any interpretable information about the nature of the problem, who caused it, or who should react to it. It could refer equally to a labour dispute, a military manoeuvre, or a modern dance exhibit. Indeed, I had to read several lines into the message to find out that none of the words in the title is a verb."

After the Alert:

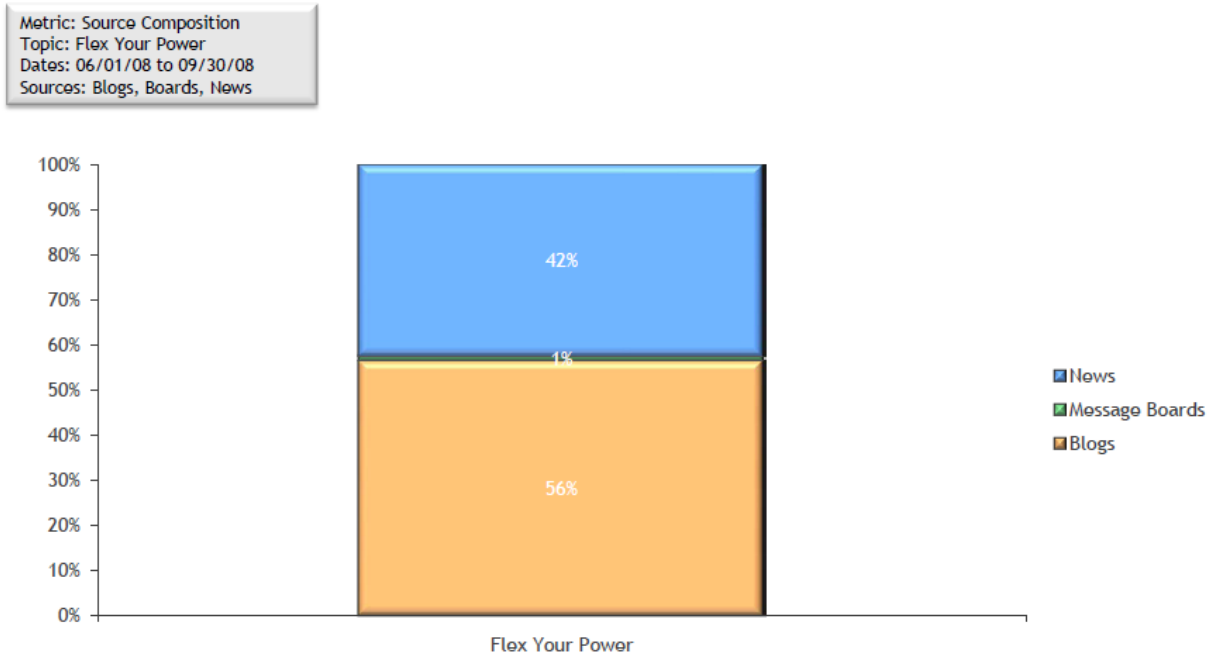
Greening the grid: Big Brother or big savings?
http://www.beaupre.com/blog/index.cfm/2008/9/24/New-model-for-greening-the-grid
9/24/08

"AMI will let consumers and utilities work together to conserve energy consumption in the home during peak energy demand periods. It will also let homeowners see when, how and why they're sucking down kilowatts so that they can make smarter, greener lifestyle decisions. Consumers benefit by saving energy and getting discount rates for playing ball with the utilities. Utilities benefit by avoiding brown-outs and black-outs during **demand response periods."**

The large positive sentiment percentage represented below relates in part to mentions of the FYP website as a resource for energy saving advice. News stories tend to have neutral sentiment, and the large number of Flex Alert-related news stories drove a larger than typical neutral sentiment percentage. Overall, the ratios are within expected range. (See graph below)



The majority of posts during the 2-day alert were found in news. During the remainder of the analysis period, most posts occurred within social media (blogs and boards). *FYP has an opportunity to leverage both arenas through targeted outreach before and during the alerts.* (See graph below)



Sample Verbatim

June Verbatim

South Bay Social Candy 6/11/08
"*Seal Ducts. Leaking ductwork accounts for more than 25 percent of heating costs in an average California home. Consider hiring a contractor to test the tightness of your ducts and repair leaks and restrictions in your ducts. Many utilities have programs to assist you. Check out the *Flex Your Power* website at http://www.fypower.org/for rebate and consumer programs or contact your local utility company."

Real Estate Blocks 6/16/08
"CALIFORNIA.gov has home energy savings tips at Flex Your Power to save the planet, and your pocket book. Personally, I like saving money, and then saving the planet. Somehow, I think the two are related."

Silke Fleischer 6/30/08
"Flex Your Power, California's outreach campaign for energy efficiency, has a Flash-based trivia game on energy savings facts online. I think it was completely created in Flash. It would be cool to see games like this created in Adobe Captivate. This one is fairly simple since it's question based, has a game show background, and uses an animated character -all these pieces could be done in Adobe Captivate. Not sure though how to display the running score …"

July Verbatim

RiversideCALiving.com 7/9/08
"Riverside Public Utilities and the California ISO is asking us to step up our conservation efforts until the end of the week, due to the high usage of statewide electricity systems. The California Independent System Operator is a nonprofit group that operates the majority of California's high voltage wholesale power grid. They issued a Flex Alert for July 8th -10th, as peak demand was approaching the record high of 50,270 megawatts, set on July 24, 2006."

Congressman Mike Honda 7/9/08
"In light of California's recent heat wave and the increase in demand of energy, I would encourage members of our community to conserve energy and to educate one another about the importance of energy conservation and keeping cool.

Flex Alert: July 8-10
California state officials have issued a flex alert from July 8-10. A flex alert is issued based on system conditions when forecasted demand is expected to exceed normal demand. This is due to the current hot weather as well as over 300 wildfires still burning statewide. According to the Flex Your Power blog, this week is expected to bring the highest electricity demand of the summer and consequently Californians are advised to conserve energy, especially between the hours of 3:00 – 6:00 PM."

Red County, California 7/8/08
"Let's give our dishwashers and clothes dryers the afternoon off, okay? And it would be an opportune time to send an email to your state legislators urging them to make it easier for in-state

utilities to generate more electricity. As it stands now, power generation is drowning in red tape while we drown in our own sweat."

August Verbatim

Santa Maria Times.com 8/16/08
In addition, the YMCA will be giving away an energy-efficient washer and dryer as a part of the Flex Your Power energy savings campaign.

Ventura County Star 8/17/08
In 2005, Ventura installed a large-scale solar electric system. The 8,000-square-foot solar canopy, which produces enough electricity to power 35 homes, makes 40 percent of the power used at the city's maintenance yard and reduces the city's electricity bill by $25,000 a year.

The city also obtained more than $500,000 in grants and loans to install energy-efficient lights and heating and air-conditioning equipment at city buildings, cutting the power bill by 25 percent. In recognition, the state gave the city a Flex Your Power energy conservation award in 2007.

Norbert Wu's Product Recommendations 8/25/08
."..Of course, officials could call a Flex Alert at any time. If they do, start saving energy immediately." Gives me the impression that all of us should stop whatever we are doing and take a nap immediately. Start saving energy immediately? How about, "turn off all unnecessary appliances" or something like that."

September Verbatim

Yodel Anecdotal 9/5/08
"In response, as part of our climate and sustainability efforts at Yahoo!, we are partnering with Pacific Gas & Electric Company(PG&E) to reduce electricity demand on the hottest days of the year (like today).

When a demand response event happens, the Yahoo! facilities team is alerted by PG&E. Then we let Yahoos know that we'll be letting our buildings run slightly warmer, and turning off lights that are decorative or near windows."

The Eureka Reporter 9/22/08
"The city of Arcata has teamed with Flex Your Power and Volunteer Center of the Redwoods, a program of the Area 1 Agency on Aging, to sponsor the first Energy Awareness Month.
Following the lead of the federal and state governments, the month will be filled with activities and events aimed at raising energy IQ. Residents are encouraged to learn more about what they can do to reduce their energy consumption. "

justBurbank.com 9/22/08
"You've probably seen their commercials; Flex Your Power is an organization trying to get people to go green the right way...they provide all the tools and answers for you all you have to do is type in your zip code. Now that's what I call service! When on this site I found out about the Free Tree program in Burbank and a $500 rebate offered to Burbankians who switched to Energy Star products! Had I only known before we replaced our pool pump. To save you from this feeling of "missing out" I'm letting you all know...go check out this site, put in your zip code and find all the money waiting for you."

Selected Blog Post Analysis with Recommendations

Blog Name: Raising California
Blog Type: Mom Blog
Web Address:
http://raisingcalifornia.blogspot.com/
Post Address:
http://raisingcalifornia.blogspot.com/2008/07/flex-alert-issued-for-california.html
Did this post link to FYP website? Yes
Comments generated by FYP post: 0

This "Mom Blogger" posted about the Flex Alert on July 8th. This post mentioned the alert, what to do to reduce energy use, and provided two links to the FYP website. This kind of post was typical during the event and highlights the wide variety of blog types that discuss the campaign and alert.

Mom blogs are a particularly interesting potential as most of the writers work from the home and are drivers of household decisions. CI can provide a list of bloggers in the "Mom Blog" space, and recommends engagement with this list, along with similar "Real Estate" and "Political" sets.


exurban nation

"There was a time not too long ago that California was the diadem in the crown of the greatest nation the world had ever seen.

State officials have just called a "Flex Alert." For those of you still living in democratic capitalist societies this might be a bit confusing. Despite among the highest rates in the nation there isn't enough power to meet demand. Demand created by insane development policies that built two story 3600sf energy inefficient McMansions dense packed in the desert. 108° in Palmdale so I'm suppose to cut back in 70° Ventura. You know California. The place that wants electric cars and hasn't approved a new generating plant for decades." 7/8/08

At 11:33 AM, segfault said...
Time to build some nuclear power plants. To heck with the NIMBYs!

First?

At 11:38 AM, Rob Dawg said...
Damn straight and i think we should build them on military bases; China Lake, Lemmore, etc.

At 11:40 AM, MaxedOutMama said...
Rob - but this is Dem energy policy in a nutshell. Needless to say it is an economic disaster. The falling home prices in CA could be good for the state's economy over a few years, because it would tend to make it much cheaper for businesses to expand. But businesses do need energy, even if they are just thinktanks.

At 11:45 AM, Rob Dawg said...
It isn't enough to call California unfriendly to business. It is downright hostile. Wicked taxes, socialist encumbrances, regulation, failing infrastructure, on and on. Worse they don't even realize it. Something like 18% of the economy. How many Fortune 500s? Get a clue Sacramento.

Blog Name: exurban nationBlog
Type: Housing/Politics/Economics
Web Address: http://exurbannation.blogspot.com/
Post Address:
http://exurbannation.blogspot.com/2008/07/headlong-into-third-world.html
Did this post link to FYP website? No (but did show FYP logo)
Comments generated by FYP post: 22

Unlike many of the other postings on the Flex Alert, this post generated a great deal of commentary. The controversial nature of this message content, coupled with the popularity of the blog, created fertile ground for the discussion that followed the brief blog post (found in its entirety at the right). The discussion did not specifically deal with the Flex Alert, but rather with energy topics in general. Reaching targets within the context of spirited discussion is an authentic and very effective engagement strategy.

Source: Napa Valley RegisterSource
Type: Opinion Section
Web Address: http://www.napavalleyregister.com/
Post Address:
http://www.napavalleyregister.com/articles/2008/08/25/opinion/commentary/doc48b2359ddd0c3213907789.txt
Did this post link to FYP website? No
Comments generated by FYP post: 52

This post originated in the op/ed section of an online newspaper. This author describes his view of the Flex Your Power campaign as part of a large conspiracy to "….convince the public to lower their standard of living…." The selection at right exhibits a small portion of the longer article, which drove significant conversation.

Such polarizing content creates strong emotion and generates response. Commentary analysis offers insight into diverse opinions. Not everyone has the time to maintain a blog site, so the quickness and ease of leaving a comment can offer a broad range of opinions. The comment on the right particularly fascinating and provides key information about non-compliance, and opportunity to educate against misperception.

The "Flex Your Power" campaign's primary funding comes from the Public Goods Charge. This is a non-bypassablesurcharge imposed on all PG&E customers. Take a closer look at your bill and you will see it called a Public Purpose Programs charge. It turns out you are paying for the TV propaganda ads. The logic here is to use a customer tax to convince the public to lower their standard of living rather than convincing Congress to lift their ban on energy sources." 8/25/08

Comment

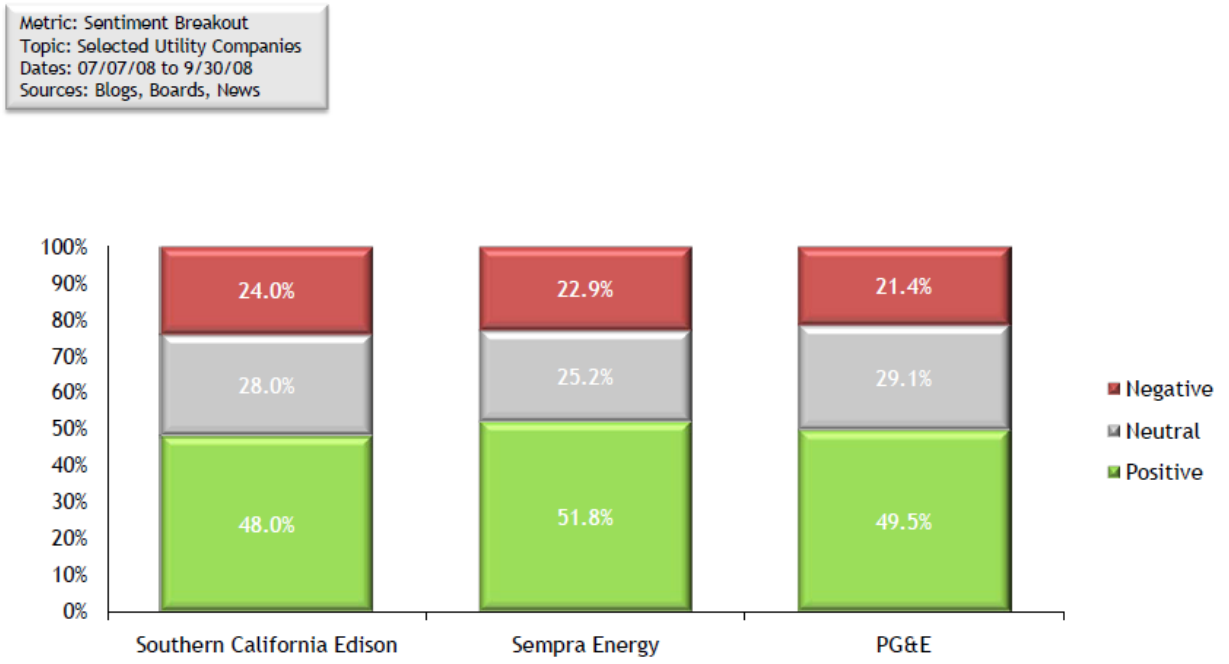
Kevin wrote on Aug 25, 2008 1:21 PM:

" Every time PGE gives one of their "Flex alerts" that they are running low on power and we are supposed to turn off our appliances, I immediately TURN ON every appliance I can find. BUILD more power plants is the appropriate response, PGE, not having us sitting around sweating like some third world country... "

Social Media Analytics - 09/01 to 09/30

Highlighted Companies: PG&E, Southern California Edison & Sempra Energy

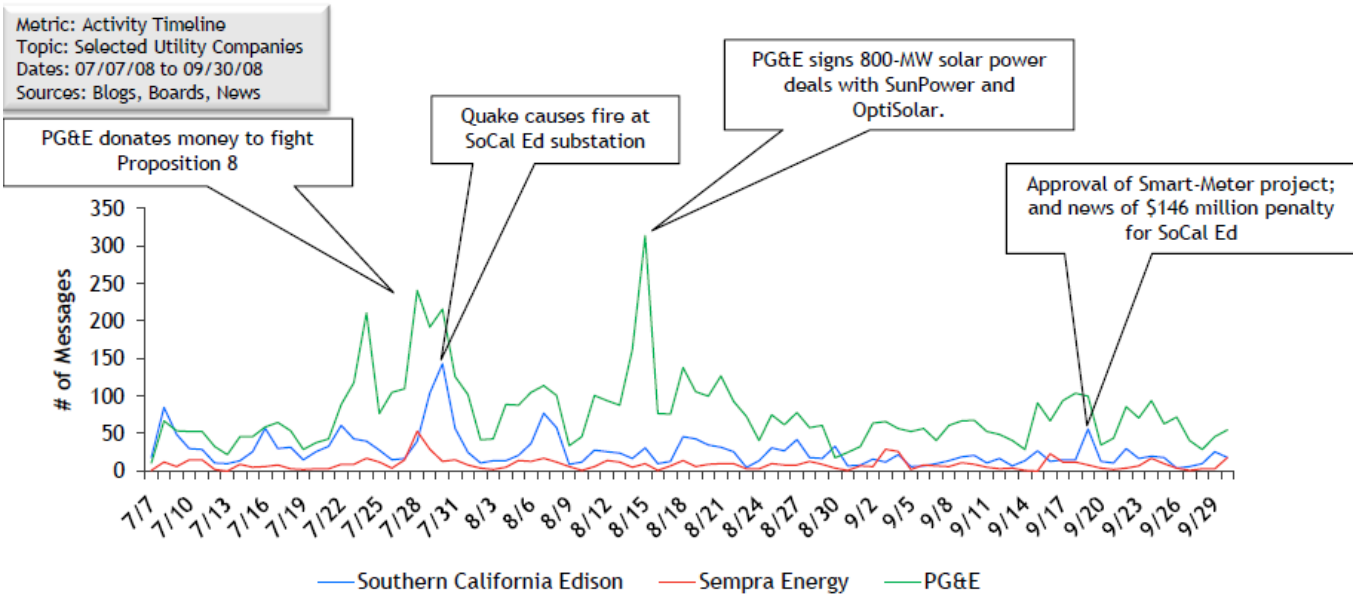
Sentiment is similarly positive for selected utility companies. Of the three, Sempra Energy shows the greatest percentage of positive sentiment. (See graph below)



PG&E Post Example:

"The Pacific Justice Institute, which specializes in religious freedom and civil liberties, has filed a complaint against the California gas and electric utility provider PG&E for giving over a quarter of a million dollars toward efforts against the California gay "marriage" ban, Proposition 8." 9/17 http://christianpost.com/article/20080917/calif-utilities-giant-sued-for-funding-250k-against-gay-marriage-ban.htm

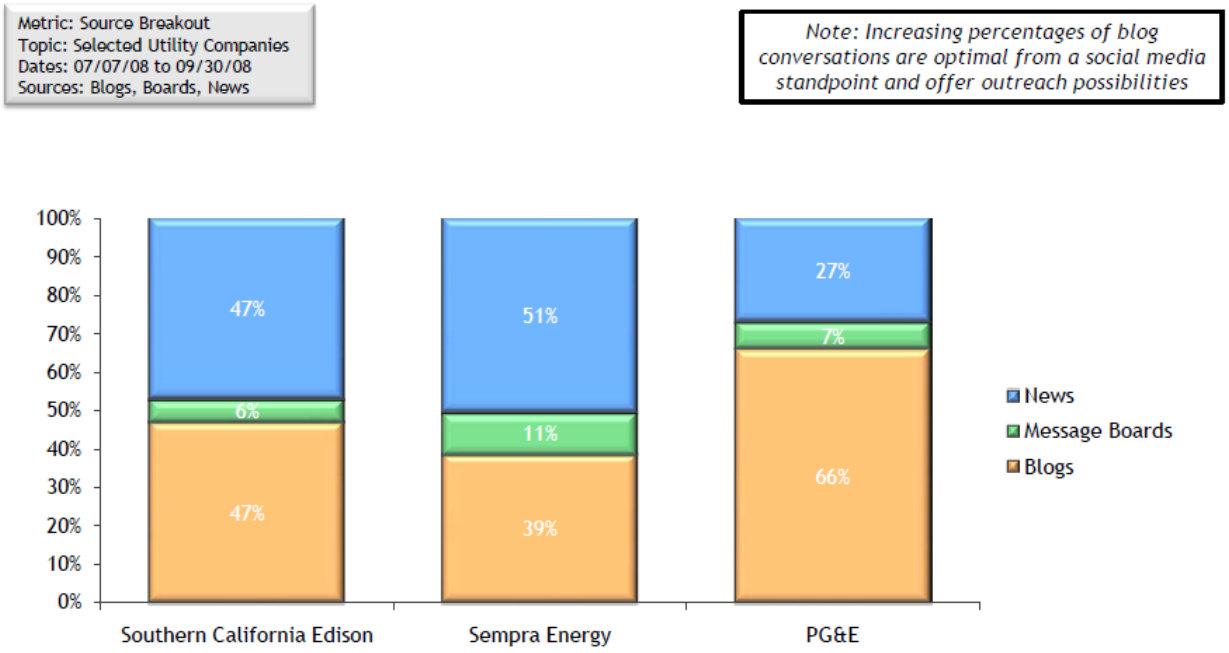
PG&E generates a large quantity of online discussion both in news and social media. The largest activity spikes resulted from news announcements and PG&E's opposition to Proposition 8.



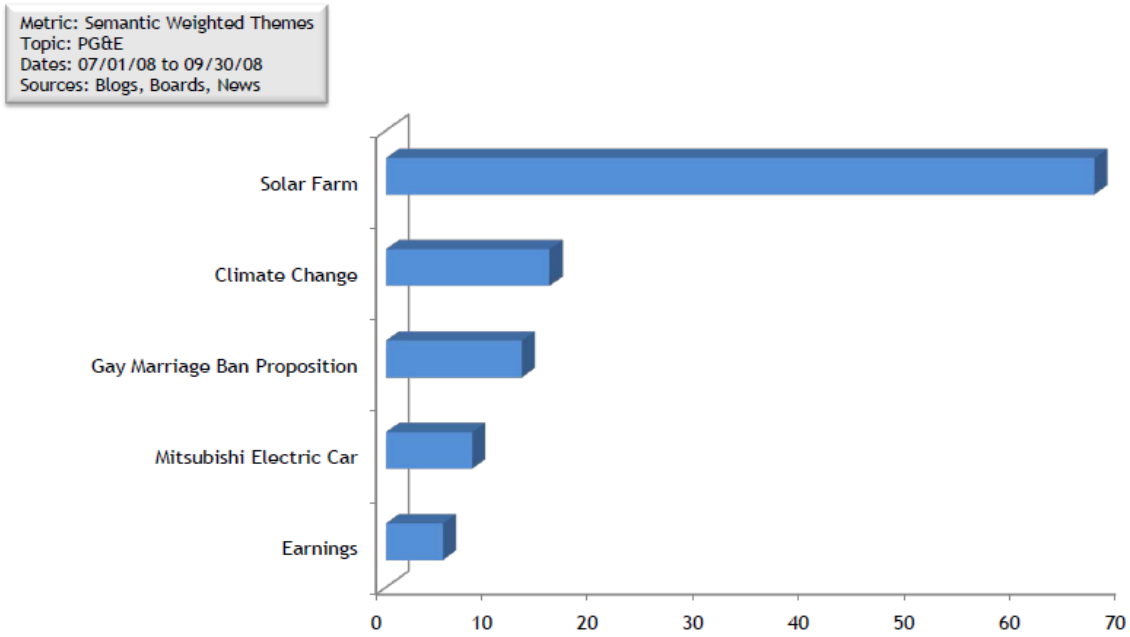
9/15/08 The Locavolt Movement: Pushing For Energy Independence

"Within the next year or so, the Bay Area may bolster its locavolt credentials with a California program that allows local governments to choose power supplies for their constituents. San Francisco, Oakland, Berkeley and Marin County are all investigating a plan that would allow them to stay with Pacific Gas and Electric Co. for billing, distribution and repair service, but allow local elected officials to choose more locally produced green power."
http://www.worldchanging.com/archives/008596.html

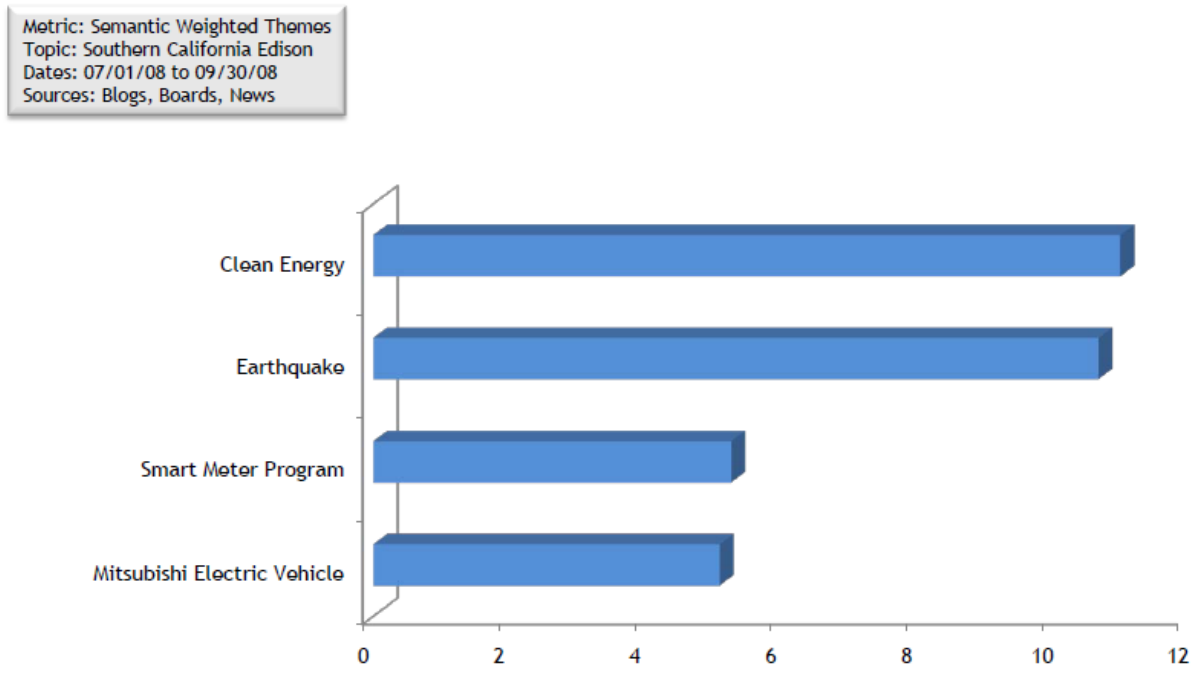
PG&E-related conversations drive a comparatively higher online activity of the group. Notably, two-thirds of PG & E activity occurs within blogs, which indicates consumer generated comment and presents an opportunity to engage at this point of interest. (See graph below)



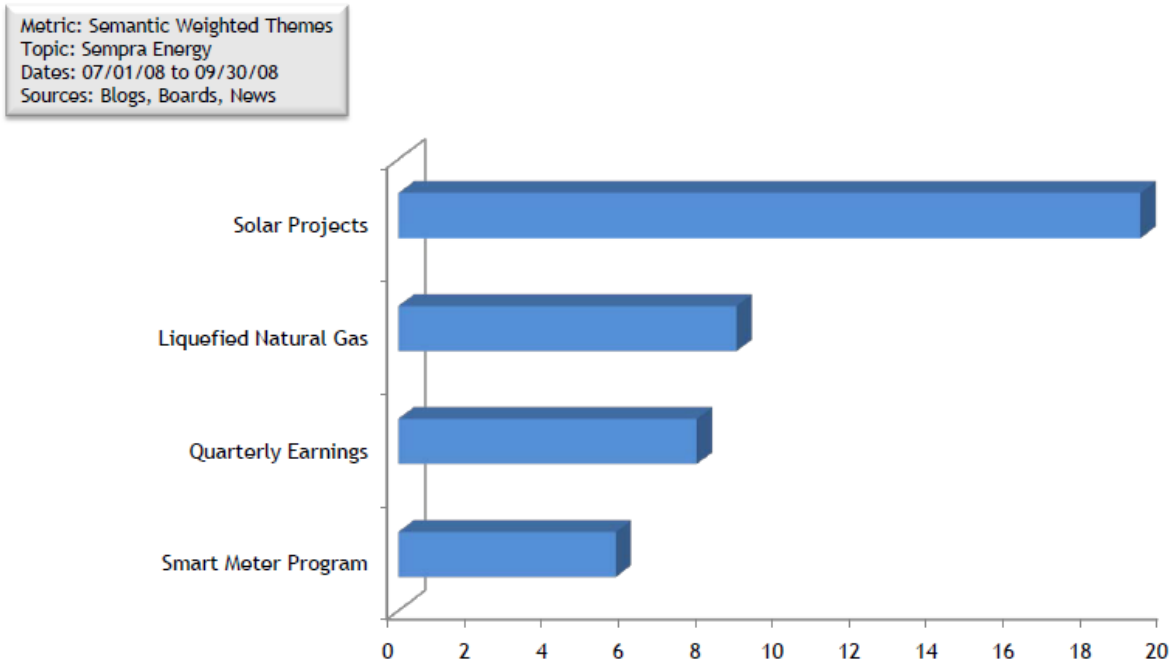
PG&E's OptiSolar Inc./SunPower solar power agreement conversations drove the strongest theme during the three-month period surveyed. Others included talk about PG&E's donation around a gay marriage issue, and the agreement to test Mitsubishi's electric vehicle. (See graph below)



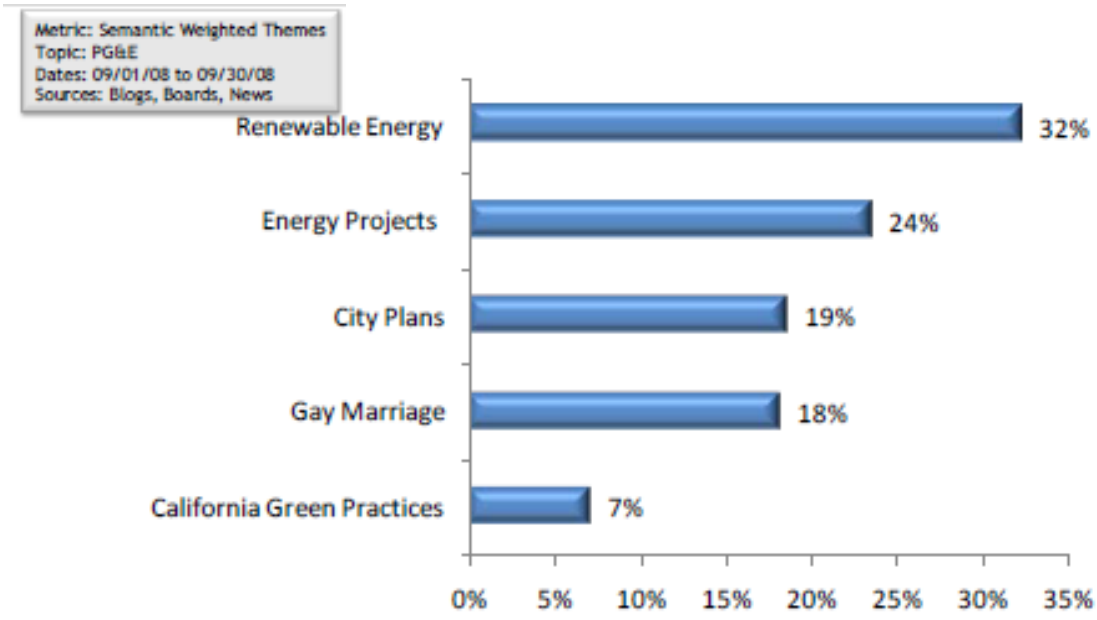
Southern California Edison's commercial solar panel rooftop project drove the strongest theme during the reporting period. Corporate participation in the Smart Meter Program and testing of electric vehicles for Mitsubishi also generated significant online discussion. (See graph below)



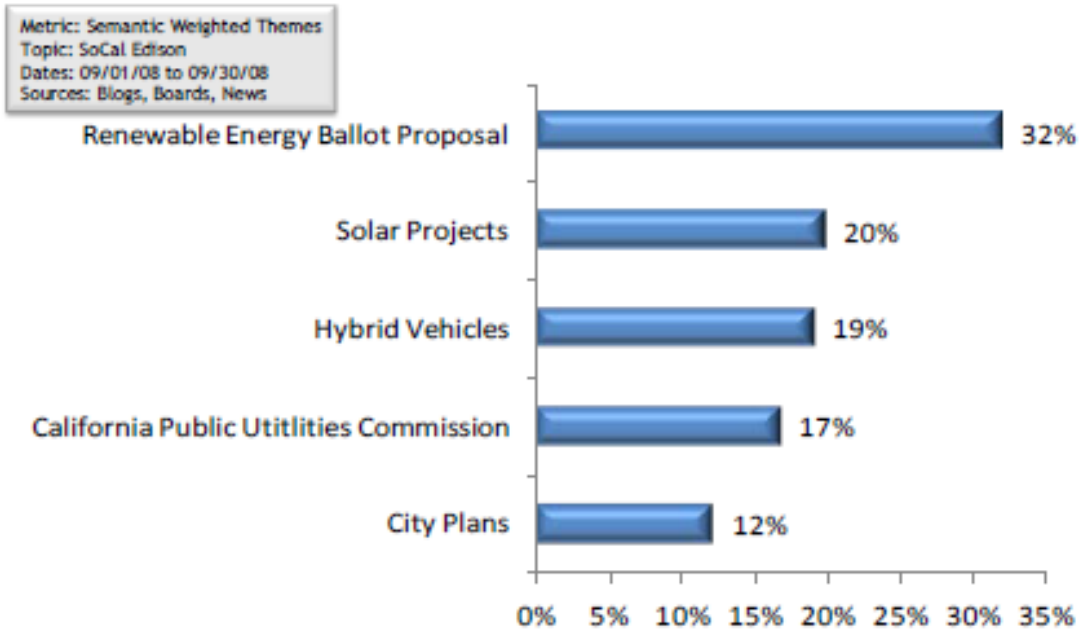
The Sempra/First Solar energy project generated a strong theme for during the reporting period, followed by the LNG terminal inauguration in Mexico, Sempra's quarterly financial results, and the Smart Meter Program. (See graph below)



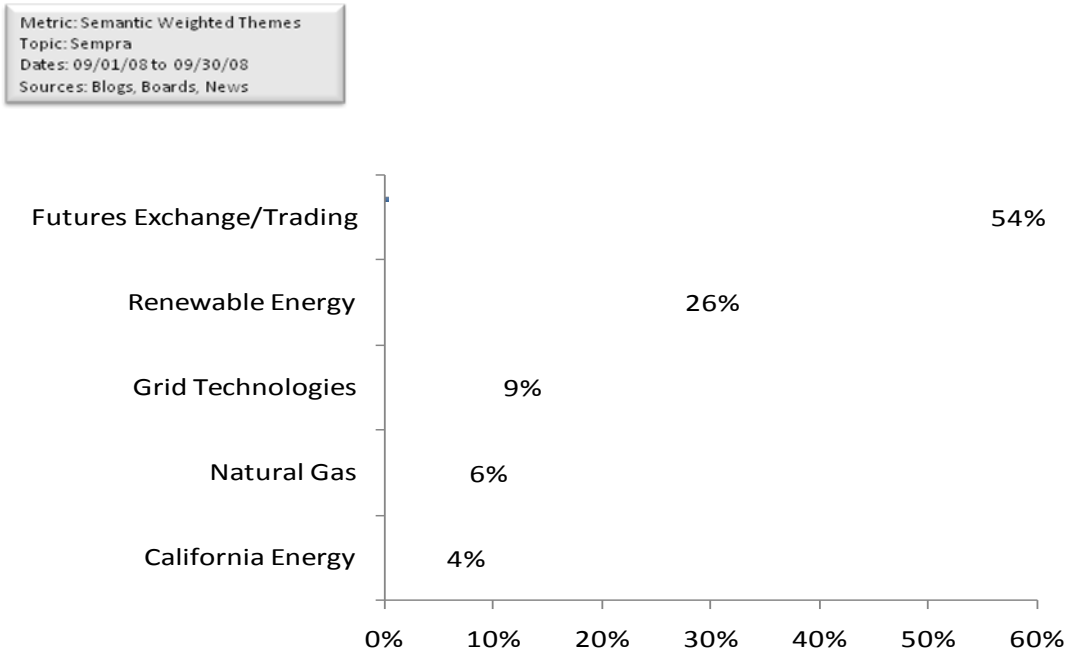
September themes listed below indicate PG & E conversational topics and provide brand information useful for messaging and marketing ROI. "Renewable Energy" as a top theme indicates a strong online contextual connection with PG & E and provides information for PR and Corporate Communications efforts. (See graph below)



September Southern California Edison themes listed below include strong associations with renewable energy topics and indicate foundational opportunities for outreach. (See graph below)



In September, Sempra's dominant theme involved the futures trading controversy, which outpaced other energy issues in online conversation. (See graph below)



Appendix

Methodology

Collective Intellect organizes social media metrics such as sentiment, activity, share-of-voice, and thematic content around specific topics. These metrics form the backbone of Collective Intellect monitoring, reporting and analysis.

Methodology: Collective Intellect's proprietary technology drives efficient collection, categorization and analysis of online blog, message board, and news post content.

- CI does not sample posts, but rather collects all available messages indexed by us or our data collection partners
- More than12MM authors indexed
- Content from more than 3MM blogs, boards, and news posts analyzed and categorized
- Author / site authority derived from in/outbound links as well as topic-specific post relevance
- Data updates every 2 minutes
- Daily categorization of over1.5MM discrete posts into more than 20,000 topics

Metrics = definitions

Online conversations = from blogs, boards, and news posts; organized by topic

Share of voice = percent of total mentions related to your company, brand or product as part of total mentions categorized to a selected competitive set

Sentiment = tonality (positive, negative, or neutral) associated with online conversations organized by topic, based on latent semantic analysis (LSA). Test results of the algorithm on standard sentiment datasets such as movie reviews indicate consistent success levels close to human interpreter accuracy.

Influencer = high-authority source; site and/or author

Authority = based on # of blog links to and from site / author, topic-specific post relevance and frequency

Themes = synthesized "concepts" relating to a specific topic, based on LSA and fundamentally more meaningful than keyword associations

Top "Related" Posts (e-mail) = top-ranked posts for a given time period, selected by topic-relevance and site authority

Topic Creation and CI Differentiation = We help clients define topics for maximum relevancy within overall marketing strategy. Our social media metrics derive from topics defined more narrowly than broadly.

- EX: “Coke” and “Pepsi” –“Coke” must be defined more narrowly to collect posts related to soft drinks rather than coal or drugs. Because Coke needs a narrower definition, we will apply the same topic “training” to Pepsi. The resulting SOV comparison not only yields a more “apples-to-apples” result, but also delivers less “noise” than Google blog searching, which harvests all posts including SPAM and other off-topic posts.

APPENDIX K: FOCUS GROUP PARTICIPANTS' CONSUMPTION

To contextualize the findings of the focus groups Summit Blue reviewed the available information on participant energy consumption. It is extremely important to understand that this is a qualitative exercise based on a very small sample of residences and should be used simply as observations to assist in understanding the focus group findings and not conclusion of fact. Moreover this review was relatively ad hoc and several potentially important factors are unknown, including: the size of each participant's dwelling, the number of people living in each dwelling and their personal consumption. Finally, it is not clear if renters rent apartments or single family homes, and if homeowners own a single family home or a condo.

In the next section, the focus group participants' consumption is presented in Table K-1 and Figure K-1 (Irvine) and in Table K-2 and Figure K-2 (San Diego).

Table K-1. Irvine Focus Group Average Daily Electric Consumption per Household

	Average Daily Electric Consumption per Household (kWh)													Monthly AVERAGE
	Participant Number													
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Aug-08	39	66	54	47	35	15	83	17	12	50	20	42	40	**40**
Jul-08	46	65	58	41	32	16	84	21	12	43	23	48	38	**41**
Jun-08	33	38	53	37	31	15	79	17	11	43	22	39	31	**35**
May-08	32	40	48	27	31		64	15	15	32	14	41	29	**32**
Apr-08	29	38	46	26	31		63	13	20	32	17	39	32	**32**
Mar-08	27	39	45	19	33		55	15	24	35	17	33	37	**32**
Feb-08	22	41	46	19	36		54	16	29	36	16	39	33	**32**
Jan-08	18	44	53	20	40		50	15	31	35	18	49	55	**36**
Dec-07	16	38	46	22	40		63	14	18	38	18	42	42	**33**
Nov-07	26	40	49	21	34		68	15	17	37	17	40	32	**33**
Oct-07	28	38	66	31	34		69	14	15	38	18	38	30	**35**
Sep-07	41	89	55	46	45		76	22	15	41	23	47	45	**45**
Aug-07	33	52	64	48	38		73	23	16	52	30	48	35	**43**
Personal AVERAGE	**30**	**48**	**52**	**31**	**35**	**15**	**68**	**17**	**18**	**39**	**19**	**42**	**37**	

Figure K-1. Irvine Focus Group Average Daily Electric Consumption per Household (kWh)

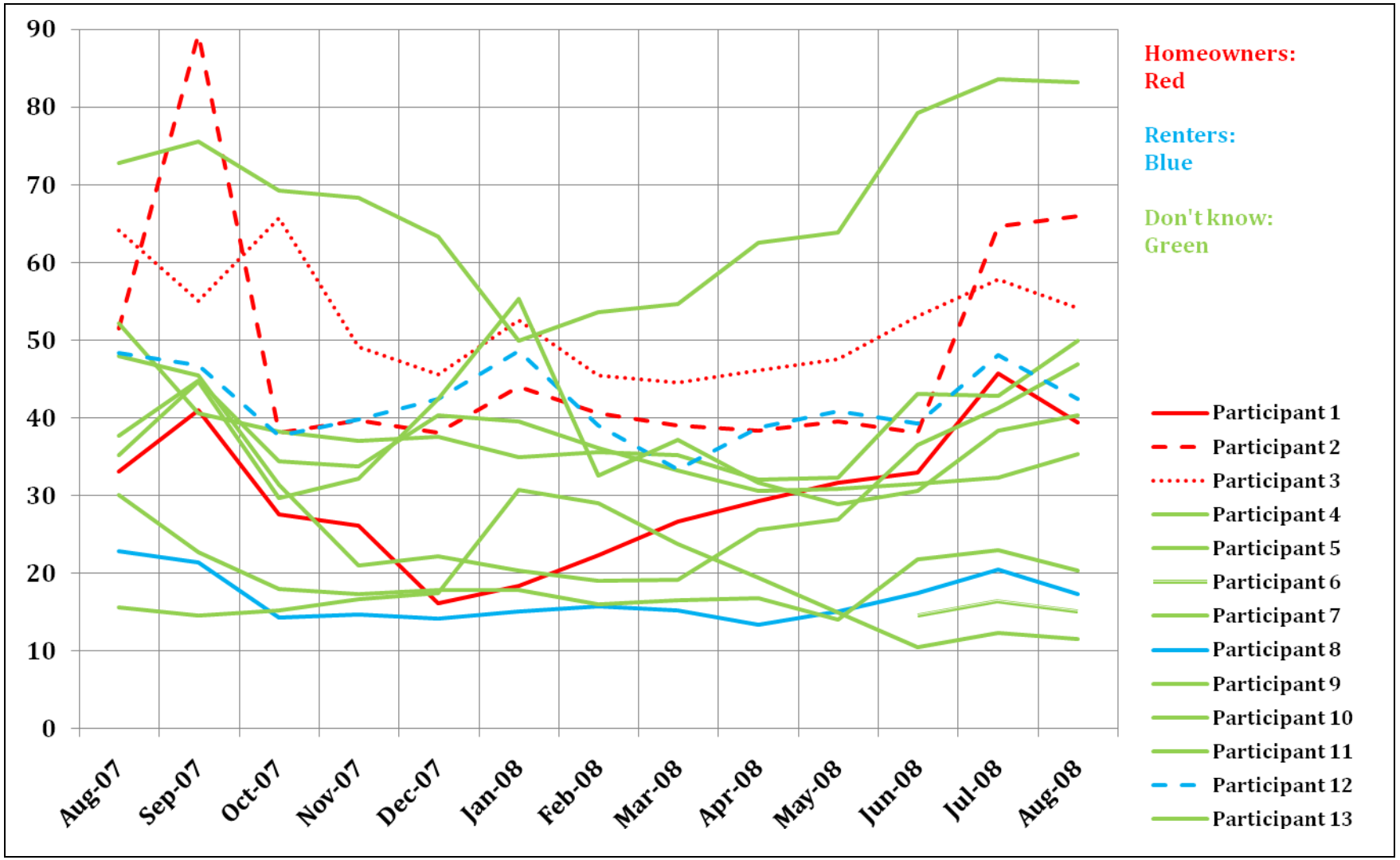
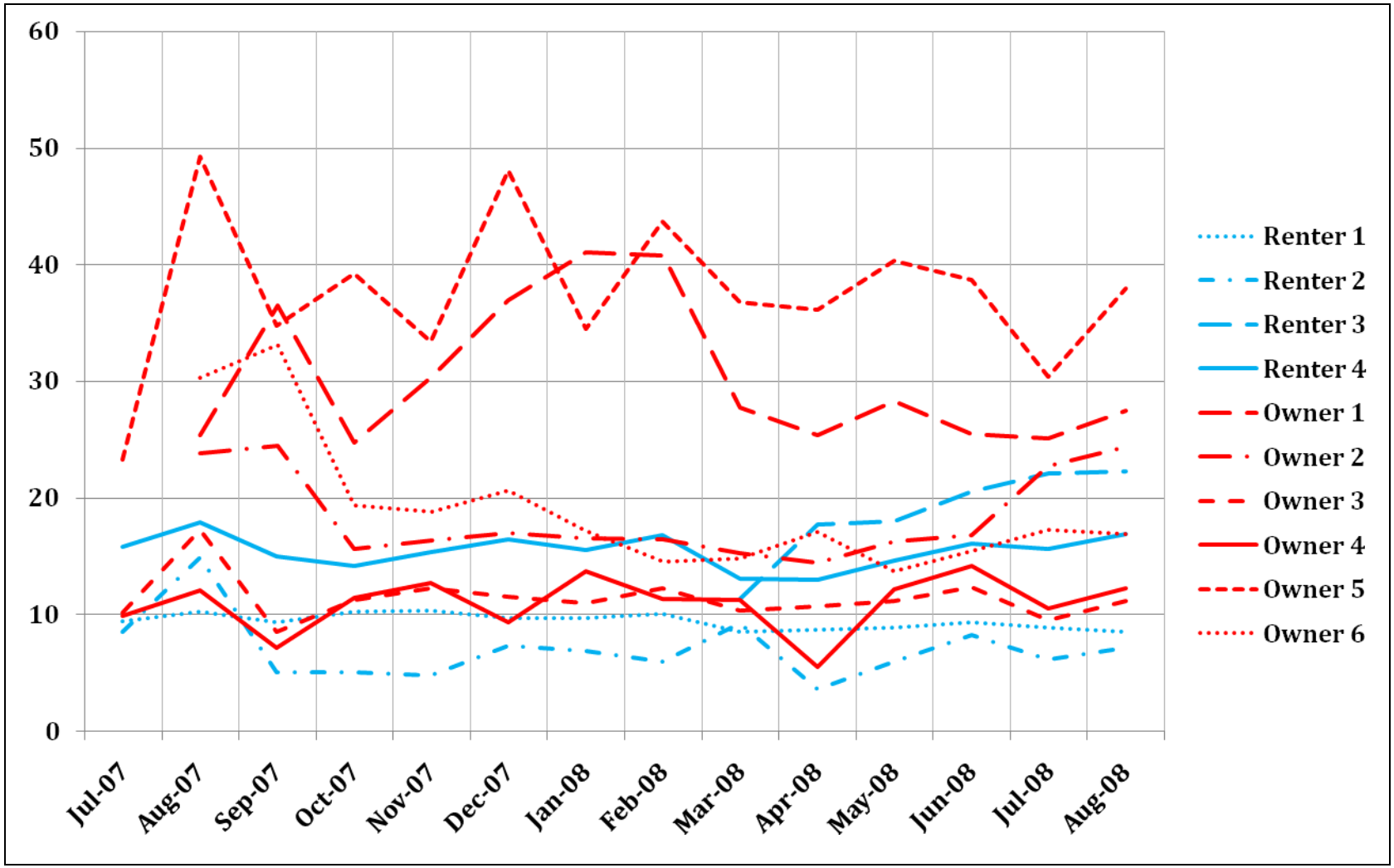


Table K-2. San Diego Focus Group Average Daily Electric Consumption per Household (kWh)

Average Daily Electric Consumption per Household (kWh)											
Date	Participant Number										Monthly Average
	Renter 1	Renter 2	Renter 3	Renter 4	Owner 1	Owner 2	Owner 3	Owner 4	Owner 5	Owner 6	
Aug-08	8	7	22	17	28	24	11	12	38	17	**19**
Jul-08	9	6	22	16	25	23	10	10	30	17	**17**
Jun-08	9	8	21	16	25	17	12	14	39	15	**18**
May-08	9	6	18	15	28	16	11	12	40	14	**17**
Apr-08	9	4	18	13	25	14	11	6	36	17	**15**
Mar-08	8	9	11	13	28	15	10	11	37	15	**16**
Feb-08	10	6		17	41	16	12	11	44	15	**19**
Jan-08	10	7		16	41	17	11	14	34	17	**18**
Dec-07	10	7		17	37	17	11	9	48	21	**20**
Nov-07	10	5		15	30	16	12	13	33	19	**17**
Oct-07	10	5		14	25	16	11	11	39	19	**17**
Sep-07	9	5		15	36	24	9	7	35	33	**19**
Aug-07	10	15		18	25	24	17	12	49	30	**22**
Jul-07	9	8		16			10	10	23		**13**
Personal Average	**9**	**7**	**19**	**15**	**30**	**18**	**11**	**11**	**38**	**19**	

Figure K-2. San Diego Focus Group Average Daily Electric Consumption per Household (kWh)



Usage in Irvine is fairly high and varies greatly not only between months, but also by participant. There are spikes throughout the summer and in the winter.

In contrast, usage in San Diego is relatively more constant than in Irvine for the majority of the participants. For the highest usage customers, consumption is high through the year.

Figure K-3. Daily Average Electric Consumption per Month by City

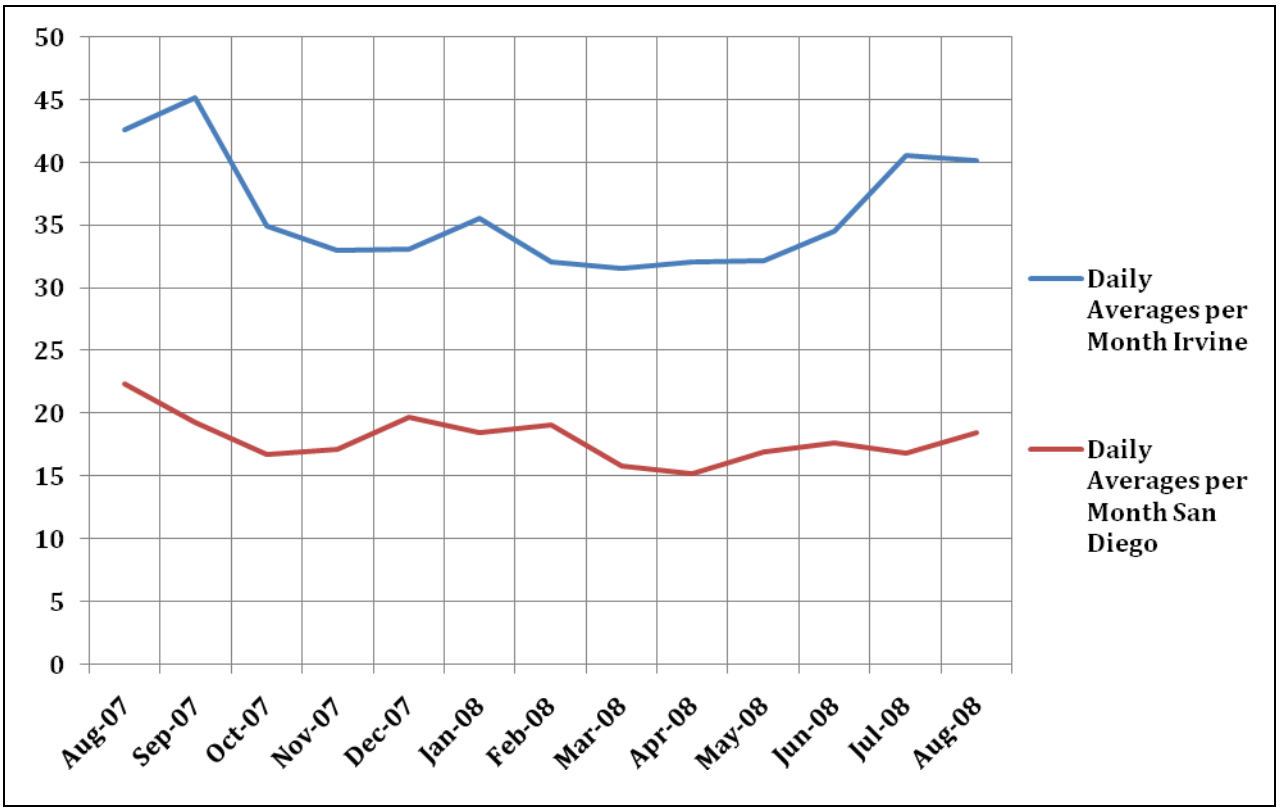
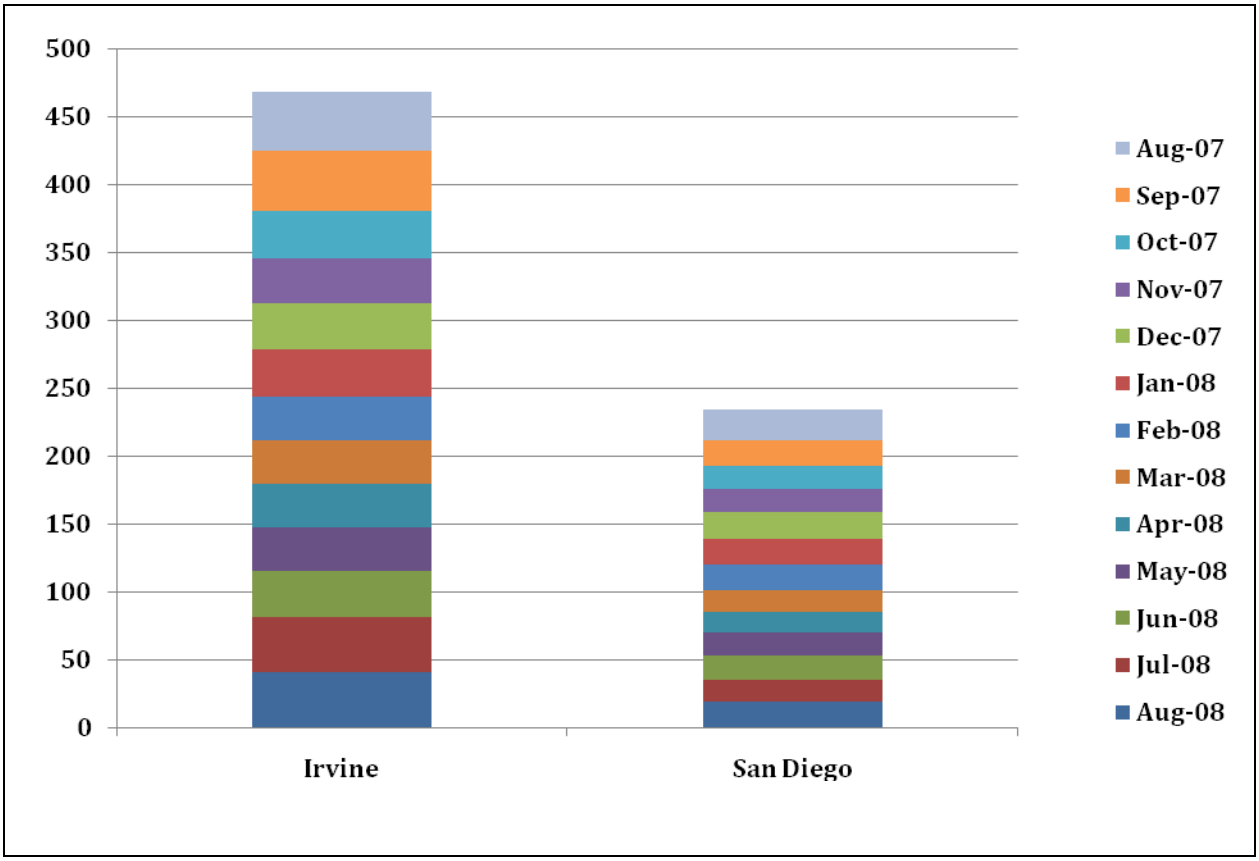


Figure K-4. Daily Average Electric Consumption per City (stacked by months)



From Figure K-3 and Figure K-4, the averages from the two cities can be compared.

Irvine participants' average consumption is very high relative to the San Diego participants'. In many months, the Irvine groups' average daily consumption per household is twice as high as it is for San Diego's groups'. In fact, if we stack each month in the 12 month period, the total average consumption was more than twice as much in Irvine than in San Diego. This could be attributed to a number of factors, most prominently the average temperatures being higher in Irvine, especially throughout the summer. This should be expected to lead to higher AC usage. Nevertheless, the two cities consumption pattern (monthly increases and decreases) are fairly similar.

APPENDIX L: SOCIAL MARKETING LITERATURE REVIEW

Summit Blue completed a review of campaigns using social media marketing strategies to promote behavioral change, and also reviewed available literature on the increasing use of cell phone text messaging by adults. This section summarizes the literature review and lessons learned with a particular eye towards lessons relevant to the Flex Alert campaign.

Social Marketing Campaigns

9.3.1 Click It or Ticket

The Click it or ticket[47] campaign is a good example of how enforcement and visibility are combined for successful outreach. The campaign originates from North Carolina and it is a National Highway Traffic Safety Administration mobilization campaign aimed at increasing the use of seat belts among young people in the United States. The campaign relies heavily on targeted advertising aimed at teens and young adults. The target populations identified are: White, new immigrant Latino, and African American young males. To best reach these segments, the media purchase focuses on late night and sports broadcasts.[48] The campaign has $10 million annual budget.[49]

Evaluation of the program revealed that there was a 14% reduction in traffic fatalities when communication (advertising the new law and the consequences of inaction) and enforcement were combined in a unified marketing strategy. However, when advertising was reduced and the campaign relied on mostly enforcement, seat belt use dropped radically. Once the communication component was brought back, compliance spiked again.[50] Nevertheless, Click It or Ticket is hailed a success, helping create the highest ever national seat belt usage rate of 82%.[51]

9.3.2 The Truth Campaign

The "Truth"[52] campaign originally started as an anti-smoking campaign in Florida. In 1998, a master settlement agreement between the government and the tobacco industry created the American Legacy Foundation (ALF). In 2000, the ALF launched the national "Truth" campaign to discourage teen smoking. It is the only national effort that is not commanded by

[47] Click It or Ticket official website. http://www.nhtsa.gov/portal/site/nhtsa/menuitem.ce4a601cdfe97fc239d17110cba046a0/

[48] Click It or Ticket Strategic Media Work Plan. National Highway Traffic Safety Administration. http://www.nhtsa.gov/staticfiles/DOT/NHTSA/Click%20it%20or%20Ticket/Articles/Associated%20Files/MediaWorkPlan2008.pdf

[49] Social Marketing Institute. "Success stories: Click It or Ticket" http://www.social-marketing.org/success/cs-clickit.html

[50] Ibid: Social Marketing Institute.

[51] Ibid: Click It or Ticket official website.

[52] The official website of the Truth campaign. http://www.thetruth.com/

the tobacco industry.[53] The ALF's strategy changed multiple times during the campaign. In 2002, "A Look Behind the Orange Curtain" attempted to shed light on the tobacco industry's marketing tactics toward teens. In 2004, "Seek Truth" used a question and answer format to encourage teens to ask the tobacco industry questions. In 2006, the "Truth" documentary used filmmaking to capture real people's reactions to the marketing tactics of the industry. In 2008, the campaign's motto became: "The Sunny Side of Truth." This newest campaign uses cartoon characters and music from animated movies to show how the tobacco industry has been using similar images in their advertising to attract teens, since once a teen becomes addicted to cigarettes, they will be providing a steady stream of income for the tobacco industry throughout their lifetime. The company's website is built in an interactive fashion, where one can hit a virtual light switch, which turns the "sun" off on the website, eliminating all "sugar coating" and showing the real Truth. There are also games encouraging kids to slay the key-tar.

The campaign's strategy aims to "expose the lies of the tobacco industry, to direct teens need to rebel at the tobacco industry, to never preach, to never condemn smokers and to relate to sensation-seeking teens."[54] The campaign has been highly controversial in the methods that they use in their advertising. Most of its TV ads were filmed in urban areas and each of them had an element of shock and awe. One of the first commercials included body bags that were laid out on the streets of an urban city. The voiceover stated that each year, X number of people die from illnesses related to smoking. Another commercial takes the viewers through the popular history of cigarettes using images of movie stars smoking, cartoons that popularized cigarette smoking (one a shadow of a camel), and other imagery. The images morph into one another. The final stop on this "journey" is an image showing a cancer patient in a hospital who is breading from an oxygen tank; he is dying because he smoked. The campaign does not only rely on an extensive TV advertising campaign, but also two Truth buses equipped with a DJ booth, video games and TV monitors traveling across the country. These buses are estimated to reach 750,000 teens and interact with the media in all media markets. Furthermore, MySpace and YouTube are used to spread the message of the campaign.

The campaign's budget was cut back from a $100 million annual budget in 2000 to only $30 million annual budget by 2008.[55] The campaign has 75% awareness rating. Furthermore, teens that are aware of the Truth campaign were 66% more likely to say they would not smoke in the coming year.[56] In addition, there has been 7.3% decline in smoking, where in the absence of the Truth campaign, the decline would have only been 5.7%. Therefore, 22% of the decline can be attributed to the campaign.[57]

Two of some of the most successful marketing campaigns come from the world of dairy. While these are not specifically "social" in nature (while one could argue that "milk does the body good"), they are very good examples of what a successful campaign looks like.

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[53] Marc Longpre. "Spreading the Truth." PR Week. 2008. http://www.prweekus.com/Spreading-the-truth/article/107357/

[54] Donna Vallone. "Evaluating the Truth Campaign." http://www.kff.org/entmedia/upload/EvaluatingthetruthCampaignDonnaVallone.pdf

[55] Ibid: Mark Longpre.

[56] Ibid: Donna Vallone.

[57] Ibid: Donna Vallone.

9.3.3 Got Milk?

The "Got Milk?"[58] advertising began in 1993. A San Francisco marketing agency developed the phrase and http://www.gotmilk.com/the advertisements. The agency's main marketing ploy revolved around the deprivation strategy; to remind consumers how upsetting it is to eat a certain food (like a brownie) and not have any milk to wash it down with. Their strategies included: making milk "cool" in order to be competitive with soft drinks, co-branding it with various food products that are best consumed when paired with milk, and aiming for the teen population, because studies show that after the age of 10, there is a decrease in milk consumption. Starting in 2001, the Hispanic population was also targeted with special Spanish language ads using the tag line: "Toma la Leche?" The "Got Milk?" advertising was placed on billboards at highly frequented places, so that people could purchase milk on their way home, and to remind them that if they don't, they might run out and be in a "sticky situation" later. However, the association between milk and other food products also means that when there is a decrease in the consumption of the food product, milk consumption also decreases.[59] The campaign's first series of advertisements tended to have a humorous underlying tone. The agency attempted to change the tone to a more serious one with the "Town without Milk" advertisements, focusing on the health effects and feelings of deprivation when milk is not available to people. However, the ads were tested in focus groups before release to the public, and the groups' negativity towards the ads provided a forewarning that these ads would not be well received. The ads were released anyways, but were pulled after a short time.

The "Got Milk?" campaign has a $27 million annual budget. The majority of funding is from the 3 cents per gallon tax from the milk processors. Furthermore, the licensing of products bearing the slogan "Got Milk?" is generating another million dollars in revenue. The merchandising of these products made the existence of a website imperative. Through the campaign's use of celebrities in print ads and humorous plot lines in TV ads, the campaign has achieved 90% awareness.[60]

While "Got Milk?" is a national campaign, California's dairy industry has also been creative. California's dairy industry generated $61.4 billion in economic impact in 2007 as compared to $47 billion in 2004, a 30 percent increase and milk production has nearly doubled in the last decade, growing from 27.6 billion pounds in 1998 to 40.7 billion pounds in 2007.[61] From 2004 to 2007, California's cheese production increased to 2.3 billion pounds up nearly 15 percent.[62] These increases in production and revenue are largely due to the Real California Cheese campaign.

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[58] Official "Got Milk?" website. http://www.gotmilk.com/

[59] Douglas B. Holt. "got milk?" Advertising Educational Foundation. http://www.aef.com/on_campus/classroom/case_histories/3000

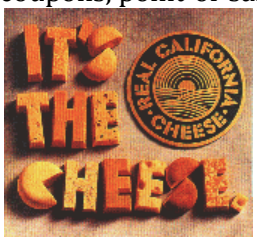
[60] "Got Milk?"UC Davis Innovator Article. Spring 1999. http://www.milk.com/value/innovator-spring99.html

[61] Linda L. Leake. "Producers embrace their own destiny in the global marketplace" AgriMarketing. 2008. http://www.agrimarketing.com/show_story.php?id=50953

[62] Ibid: Linda L. Leake.

9.3.4 Real California Cheese

In 1983, California was a net-importer of cheese; however, California supplied about 10% of the nation's milk supply. Analyses identified that cheese was the dairy industry segment that offered the greatest profit and growth potential for the state's dairy farmers. The Real California Cheese (RCC)[63] campaign was created in 1985 to promote cheese produced in California. First, the RCC seal was created.[64] This seal signified to consumers that the cheese they are purchasing is natural and made from California milk in a California cheese plant. Furthermore, it has passed an inspection program, proving quality and high production standards. This seal was also used in advertising, coupons, point-of-sale materials, and in brochures.



From 1985 to 1995, the campaign and advertising did not have a uniform look or a motto. In 1995, the tag line "It's the Cheese." was created. This phrase was used in humorous advertisements, making the exaggerated claim that the real reason people come to California is the cheese. This advertising garnered much attention in the advertising world. Then, in 2000, the tagline was changed to "Great cheese comes from Happy Cows. Happy Cows come from California." A series of advertisements depicting talking cows in humorous situations accompanied this phrase. Awareness greatly increased through the use of this strategy.

The campaign has a $33 million annual budget, if which $23 million is used purely for advertising. Advertising methods included: TV ads, billboards, buses, and bus shelters. In 2005, an RCC ad appeared during the Super Bowl. TV spots generally targeted women between the ages of 25-54, and were aired 60% daytime and 40% primetime. There was also pronounced emphasis on retail promotions (store samples, coupons), since this encourages product trial (with reduced risk of dissatisfaction with a product for the consumer) and re-purchase. Cross-brand coupons (partnerships) were also used. This campaign has reached 75% awareness.[65]

9.3.5 Spare the Air

The Spare the Air[66] campaign was established in 1991 to educate the public about summer air pollution and promote individual behavior changes that improve air quality. The program was initiated by the Bay Area Air Quality Management District (Air District), the government agency responsible for improving air quality across nine San Francisco Bay Area counties. Spare the Air days are declared when levels of ground-level ozone are predicted to exceed the EPA's federal health-based standard. In 2004, an incentive was added to encourage participation in the voluntary program: free BART rides to morning commuters. Then, in 2005, the program was extended to include other forms of

[63] Real California Cheese original website. http://www.realcaliforniacheese.com/rcm

[64] Columbia Business School Case Study. "IT'S THE CHEESE. Real California Cheese." http://www.californiadairypressroom.com/sites/default/files/COLUMBIACASESTUDYFINAL-1.pdf

[65] Ibid: Columbia Business School Case Study.

[66] 'Spare the Air' official website. http://www.sparetheair.org/

transportation, and in 2006, to all-day free transit. This campaign claims a 15% public transportation ridership increase on Spare the Air days. [67] In 2006, the campaign had a $13.6 million budget[68] and the awareness rating of the campaign was 76%[69]. However, critics state that with the free rides that were provided on certain Spare the Air days, it cost nearly $411,000 per ton to reduce vehicle emissions and on the days when free rides were not offered, ridership only increased by 1%.[70] Thus, this method seems too costly and seems to have only a short term effect. Partially due to funding problems, there were only three "free-rides" Spare the Air days in 2007. In 2008, June 19 was the only planned 'Spare the Air' day providing free transportation. "Free rides" were not provided on any other days.[71] This campaign highlights the problems that most social marketing campaigns face: how do you measure success? When multiple confounding variables contribute to a problem, measuring the level of reductions achieved by any one solution is a difficult task. Campaign planners need to define clearly the goals of the campaign and find reliable metrics that can be used to measure "success."

Text Messaging

Text messaging has become a popular medium for communication between friends and family. According to Telephia, a consumer research firm 116 million US mobile subscribers (52 percent of all) are actively text messaging. Texting is really popular in the 13-17 year old group (having increased 41% in the past two years) and their parents are also driven to use text messaging to stay in touch with their kids, reports M: Metrics. Therefore, for those between the ages of 45-54, texting has increased 130 percent in the past two years.[72] In 2006, a consumer research firm found that women in their 40s are the fastest growing text message demographic.[73]

This medium is quickly becoming the new avenue for mass marketing, too. Nielsen, a media research company, found that 2.9 million people received the Obama VP text message, making it the single largest mobile marketing effort ever.[74] Furthermore, text messages are used by the Obama campaign to ask supporters to come to rallies and to register to vote. Text messages can easily be forwarded to friends; therefore one text message's reach can grow exponentially. Texting has also been used for social marketing purposes.

Police in Suffolk, England caught a burglar through sending out text message alerts to the community and someone spotting and reporting the criminal to the police. Once people sign up on the police website, they are sent text messages to ask community members to be on the lookout.

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[67] Allison PR. "Spreading the Word to Spare the Air." 2006. http://www.allisonpr.com/?PageID=189

[68] RedOrbit. "'Spare the Air' Funding Cleared for Another Year Free Transit Approved for 3 Days This Year." 2007. http://www.redorbit.com/news/business/815498/spare_the_air_funding_cleared_for_another_year_free_transit/index.html

[69] Ibid: Allison PR.

[70] Ibid: RedOrbit.

[71] SF Gate. "Thursday declared first Spare the Air day" May 15, 2008. http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2008/05/14/BA7H10MF8F.DTL

[72] "More parents turn to text messaging to keep up with their kids." April 12, 2008. SignOnSanDiego.com. http://www.signonsandiego.com/uniontrib/20080412/news_1n12text.html

[73] "Do u txt ur kdz?"December 17, 2006. Boston.com. http://www.boston.com/business/articles/2006/12/17/do_u_txt_ur_kdz/?page=1

[74] "2.9 million received Obama's VP text message." Telephia.com. http://www.telephia.com/html/press%20releases/ObamaSMSVPMessage.html

The police, with the use of software, are able to send out 200,000 emails in one hour.[75] Text messages are also used to help quit smoking amongst the Maori in New Zealand.[76] Smokers who sign up for the program receive personalized messages to help them quit.

While the FCC recently approved emergency alert text-messaging system[77], some concerns have been voiced that the current US mobile network is not equipped to transmit a large number of text messages, since each mobile device first has to be located in the network and then the message needs to be relayed through a service center. Messages could clog the system, leading to messages being dropped.[78] Nevertheless, the Commercial Mobile Service Alert Advisory Committee (CMSAAC) is working to create new standards in alleviating this problem. [79] Furthermore, since system overload can be predicted by CAISO the day before Flex Alerts are called, text messages would not need to go out all at the same time, as with a life threatening emergency. They could be sent out in a staggered fashion; therefore avoiding the clogging of mobile networks.

In sum, using text messages in social marketing campaigns has gained popularity. Women in their 40s, the primary target audience of the FYP campaign, are using text messaging at an increasing rate. While text messaging faces some limitations today, changes in standards of technology are taking place. A new report by the Direct Marketing Association states that while 65% of email messages, only 10% of mobile text messages are spam. The average time that it takes to read a text message is just 15 minutes. [80] Therefore, text messaging might be a more effective tool for outreach than emails.

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[75] "Police Texting Scheme Nets First Criminal." February 21, 2006. Bury Free Press. http://www.buryfreepress.co.uk/news/Police-texting-scheme-nets-first.1359630.jp

[76] "Campaign hopes to end Maori smoking cycle." August 16, 2008. Stuff.co.nz http://www.stuff.co.nz/stuff/4657411a8153.html

[77]"FCC approves emergency alert text-messaging system." April 10, 2008. CNN. http://www.cnn.com/2008/TECH/04/09/fcc.cell.phone.alert/

[78] Patrick Traynor. "Characterizing the limitations of third-party EAS over cellular text messaging services" September, 2008. Georgia Institute of Technology. http://3gamericas.org/PDFs/Characterizing_the_Limitations_of_3rd_Party_EAS-Traynor_Sept08.pdf

[79] Ibid: Patrick Traynor. http://3gamericas.org/PDFs/Characterizing_the_Limitations_of_3rd_Party_EAS-Traynor_Sept08.pdf

[80] "DMA: Text message campaigns most successful." July 23, 2008. http://www.bizreport.com/2008/07/dma_text_message_campaigns_most_successful.html