



Massachusetts Consumer Survey Results 2011

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Final Massachusetts Lighting Consumer Survey Report

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Executive Summary

This report presents the findings of research conducted to understand the market for energy-efficient light bulbs, with particular emphasis on establishing a baseline at the onset of the changes in lighting standards resulting from the Energy Independence and Security Act of 2007 (EISA). The report presents the findings of a telephone survey conducted by the NMR Group, Inc. (NMR) and its subcontractor Tetra Tech, Inc. (here after the Team) from December 8, 2011 through January 19, 2012.

Background and Methodology

The goal of the consumer survey was to track key indicators of the market for compact fluorescent lamps (CFLs), light emitting diodes (LEDs), and halogens as well as the impact of EISA. We fielded the survey in December 2011 and January 2012. The survey was timed to coincide with the EISA-mandated onset of the phase-out of 100 Watt incandescent bulbs. Therefore, the results provide a baseline understanding of these important indicators at the earliest stages of EISA; the Team will field two additional surveys later in 2012 to track changes that may occur as EISA implementation continues. Some indicators addressed in the survey have been asked in previous surveys, and we compare results across those surveys when possible.

Topics addressed in the first wave of consumer surveys included the following, some of which allowed for the continued monitoring of the market from earlier evaluations (*e.g.* awareness of CFLs):

- Awareness of and familiarity with spiral and specialty CFLs, LEDs, and halogens meant to replace A-line incandescent bulbs
- Awareness of and anticipated reaction to EISA
- Current use of CFLs and LEDs
- Satisfaction with CFLs and perceived advantages and disadvantages of using CFLs
- Recent light bulb purchases, particularly of 100 Watt incandescents to identify stockpiling of incandescent bulbs
- Familiarity with lighting terminology such as lumens and color temperature
- Household demographics

The Team drew the sample from among customers of the five PAs in Massachusetts. To increase response rates, we took the following steps:

- Sent an advance letter to potential respondents informing them of the survey
- Called household up to 10 times before removing the phone number from our call lists
- Fielded the survey in English and Spanish

In total, we surveyed 582 households, with 12 respondents answering the Spanish version of the survey. We weighted the data so that the results are representative of the population of the five PAs, but we group the results for all PAs together as this is a statewide program.

Summary of Findings

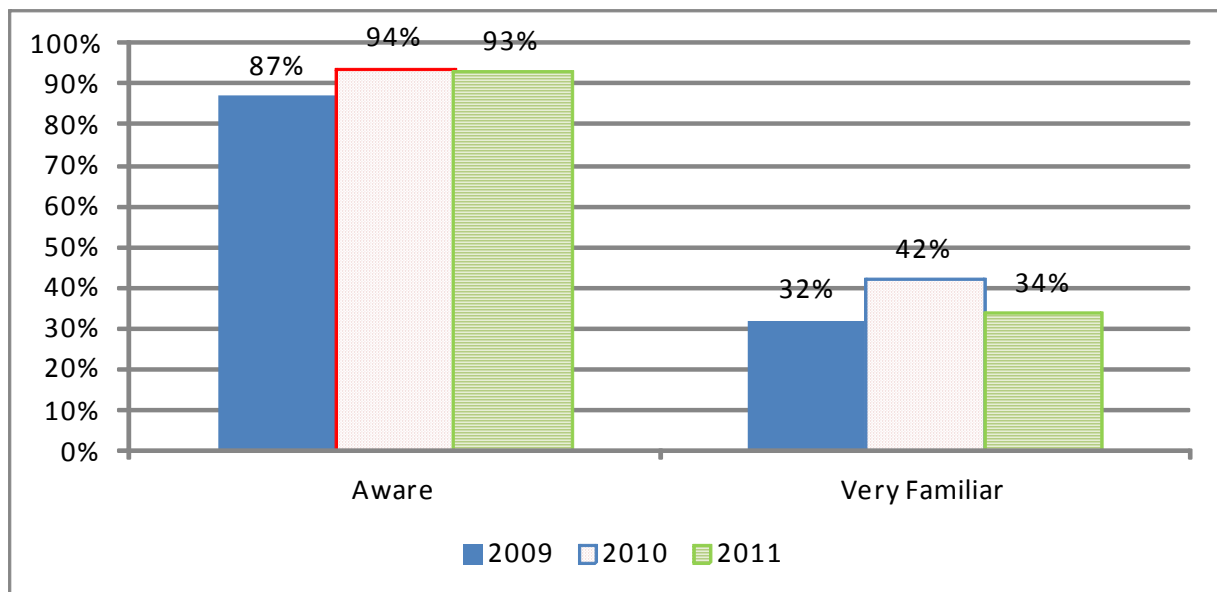
In this section, we present a summary of key findings from the telephone survey, comparing them to results of the 2009 and 2010 lighting telephone surveys when possible. The Team notes that some of the comparisons show unexpected results. We explored the possibility that the use of different weighting schemes and sampling approaches in 2009 and 2010 versus 2011 explained these unexpected results, but, as the demographic section and [Appendix A](#) make clear, these methodological changes are not the cause of the results. One possible alternative explanation is that the attention—much of it negative—that CFLs have received in recent months underlies the unexpected findings, and we will explore this issue more in the second and third waves of the survey to be fielded in June and December of 2012.

Awareness of Energy-Saving Light Bulbs

The survey assessed respondents’ awareness of and familiarity with CFLs and other energy-saving bulb types.

Nearly all respondents in 2011 (93%) indicated that they had been aware of CFLs before responding to the survey (Figure ES-1). The percentage of respondents self-reporting awareness of CFLs is similar to that in 2010 and statistically greater than in 2009. However, the percentage of respondents who said that they were “very familiar” in 2011 decreased to 34% (close to 2009’s 32%), compared to 42% in 2010. We will continue to track this indicator in later waves of the survey in an effort to explain this unexpected finding.

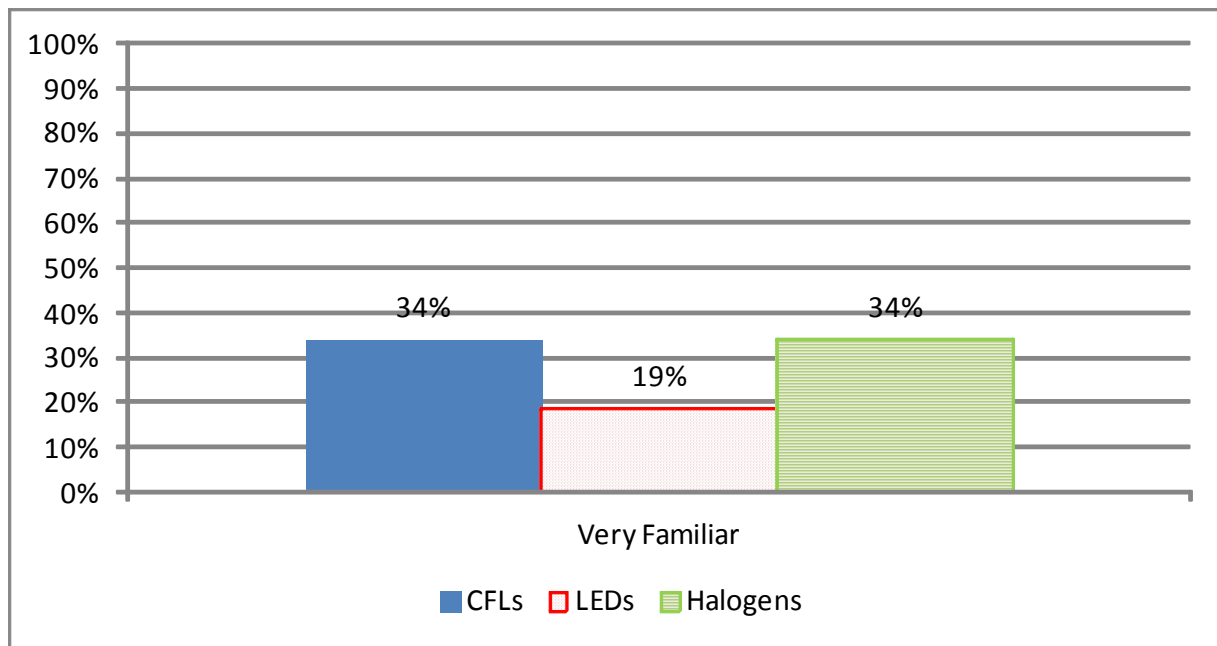
Figure ES-1: CFL Awareness and Familiarity, 2009 to 2011



Familiarity with all types of specialty CFLs (specifically, dimmable, 3-way, flood/recessed, candelabra, globe, and A-line versions) increased from 2010 to 2011. Familiarity with flood or recessed CFLs increased the most, with 32% being “somewhat” or “very familiar” in 2010 and 49% being so in 2011. Familiarity with A-line CFLs increased very little from 2010 to 2011, suggesting that the PAs may need to increase consumer education efforts about this bulb, as it is more difficult to distinguish from incandescents when simply looking at bulbs in the lighting aisle of the store.

Only 19% of respondents reported being “very familiar” with A-line, screw-in LEDs, but 34% said they were familiar with A-line, screw-in halogen bulbs, a similar percentage to CFLs (Figure ES-2). Based on work the Team has conducted elsewhere that showed very little familiarity with halogen bulbs,¹ we suspect that respondents may have confused halogen bulbs meant to replace incandescents with other types of halogen bulbs. Most respondents who voiced awareness of both CFLs and halogens correctly concluded that CFLs save more energy than halogens.

Figure ES-2: Familiarity with CFLs, LEDs, and Halogen Bulbs



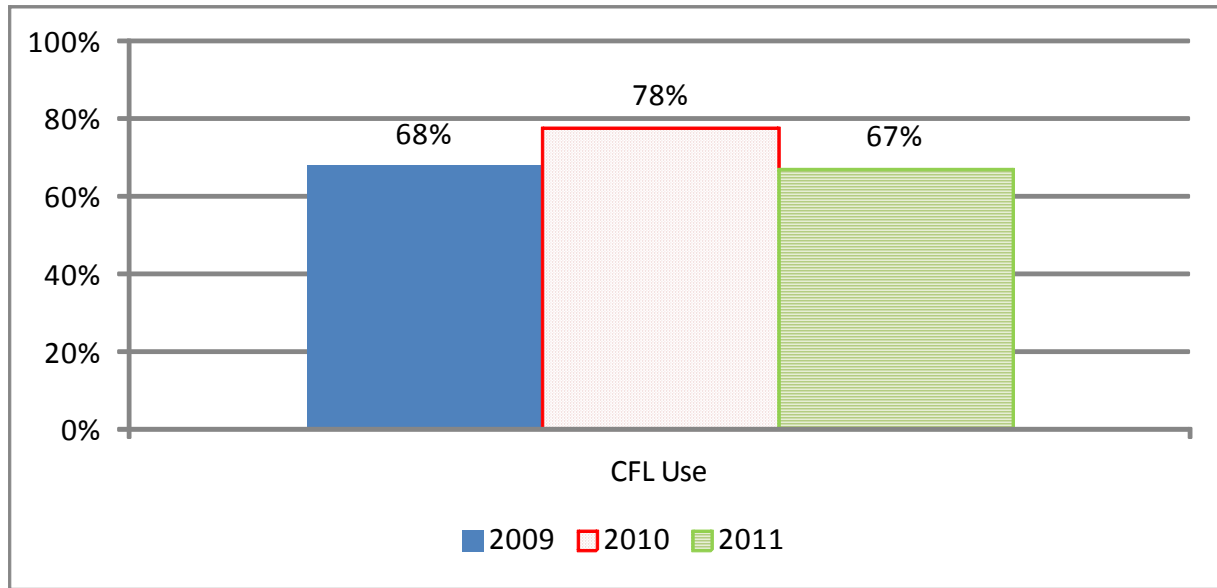
Use of Various Lighting Technologies

When asked if they had ever used CFLs, 67% of respondents said that they had used the products (Figure ES-3). This percentage represents a decrease from 2010 but is similar to the percentage in 2009. Again, we suspect that the media attention given to CFLs has led to a more nuanced understanding of the products, and that consumers can now distinguish more easily between

¹ NMR Group, Inc. 2011. “Connecticut Lighting Focus Groups: Exploration of Market and Reactions to Various Efficient Lighting Choices.” Available at <http://www.ctenergyinfo.com/111121%20EISA%20Lighting%20Focus%20Groups%20Report.pdf>

CFLs and other light bulb types. It may also be that the negative attention given to CFLs led respondents to be wary of admitting that they had used the maligned product, which now is perhaps no longer such a socially unacceptable response. The team will explore both of these potential explanations in the second and third waves of the survey. About one-fifth of respondents (18%) reported using dimmable CFLs.

Figure ES-3: Respondents that have Ever Used CFLs, 2009 to 2011



A total of 79% of households say that they use at least one incandescent in their home, but only 34% of households use the 100 Watt incandescent covered by the first stage of EISA currently being implemented.

Only 16% of respondents report using screw-in LEDs at this time. These bulbs are most frequently used in floor, table, or other portable lamps.

Recent Lighting Purchases

In the previous report, the Team has argued that purchase behavior for lighting products is best asked onsite to reduce, although by no means eliminate, self-report error regarding this topic. Yet, the onset of EISA implementation created the need to establish a baseline about the availability of 100 Watt incandescent bulbs and how consumers who cannot find these bulbs react to the situation.

Only 15% of respondents had shopped for 100 Watt incandescent light bulbs in the three months prior to the survey. Of those who had shopped for the bulbs, most (74%) were able to find them easily on store shelves. This result for Massachusetts is consistent with anecdotal evidence from California, which implemented EISA a year early, that 100 Watt incandescent bulbs were widely available in that state for at least six months and perhaps even longer after the beginning of the

phase-out. If the California experience holds for Massachusetts as well, future surveys may not report decreased 100 Watt availability until late 2012, and possibly early 2013.

Twelve of the 22 respondents who could not find 100 incandescent bulbs purchased at least one other type of bulb; some purchased more than one bulb type. In total, nine respondents purchased CFLs, eight purchased incandescent bulbs, four purchased halogen bulbs, and one purchased an LED. Seven of the eight incandescent purchasers bought lower wattage bulbs, and only one purchased a higher wattage bulb. Note that the other nine respondents who could not find 100 Watt incandescents said that they did not buy any bulbs at that time.

Turning again to all 582 respondents, 52% of respondents reported buying at least one type of light bulb in the three months prior to the survey. CFLs (27% of all 582 respondents) and incandescents (34% of respondents) were most commonly purchased, although at least some respondents also reported buying halogens, fluorescent tubes, LEDs, and pin-based CFLs or LEDs.

Key Lighting Concepts

When asked what types of information consumers look for on bulb packing, 95% report that they consider wattage, 91% consider price, and 76% consider wattage equivalency. Other characteristics considered by more than one-half of the respondents include bulb life, color appearance, the ENERGY STAR label, and bulb shape.

Given that lumens and color appearance will become increasingly important aspects of choosing a light bulb after the phase-out of incandescent bulbs, the Team asked respondents if they had heard of these terms, and, if so, what the terms meant. Most consumers had heard of lumens (64%) and the terms “warm white” and “cool white” (74%). Of those who had heard these terms, 77% (or 49% of all 582 respondents) correctly understood that lumens referred to light output or brightness, and 92% (or 67% of all 582 respondents) that “warm white” and “cool white” referred to the color appearance of the bulb.

Awareness of and Reactions to EISA

The survey coincided with the onset of the EISA-induced phase-out of 100 Watt incandescent bulbs. We asked respondents whether they had heard about EISA and then inquired about their likely reactions to this legislation.

More than one-half (57%) of respondents reported being aware of the incandescent phase-out resulting from EISA.

Yet, even if they are not aware of incandescent phase-out, at some point most consumers will be confronted with the fact that most incandescent bulbs will no longer be available on store shelves. Therefore, after having explained the phase-out to respondents, we asked them what type of bulb they would be most likely to purchase after 100 Watt incandescents were no longer available. Respondents did not speak with one mind about their anticipated bulb purchases. One-

third of respondents said they would buy a lower wattage incandescent bulb, and one-third said they would buy a 23 Watt CFL. Only four percent of respondents said they would buy a 150 Watt incandescent, but 10% would choose a 72 Watt halogen or a 17 Watt LED (which is expected to enter the market later in 2012).

When asked to explain their bulb choices, those who said they would buy CFLs or LEDs most often mentioned the energy savings associated with these bulbs, while those that chose the other bulb types cited preference for the light color or brightness.

The possibility that consumers will buy many incandescent bulbs and save them for use after the incandescent phase-out has been the subject of much discussion in the energy-efficiency community and in the media discussions of EISA. Our research concludes that about one-fourth (23%) of all respondents are likely to engage in this “stockpiling” or “hoarding” behavior; however, 28% of respondents who were aware of EISA prior to the survey reported being likely to stockpile incandescent bulbs. In fact, some respondents already have begun stockpiling bulbs. Approximately seven percent of all 582 survey respondents reported having purchased six or more 100 Watt incandescent bulbs in the three months prior to survey. Moreover, the 31 respondents who had purchased 100 Watt incandescents and also indicated that they were likely to stockpile bought a total of 549 100 Watt incandescents compared to just 82 bulbs among the 16 100-Watt purchasing respondents who were unlikely to stockpile. In short, based on these survey results, it appears that most respondents are not likely to stockpile, but the few who are will likely buy very large numbers of incandescent bulbs.

CFL Price Awareness and Satisfaction

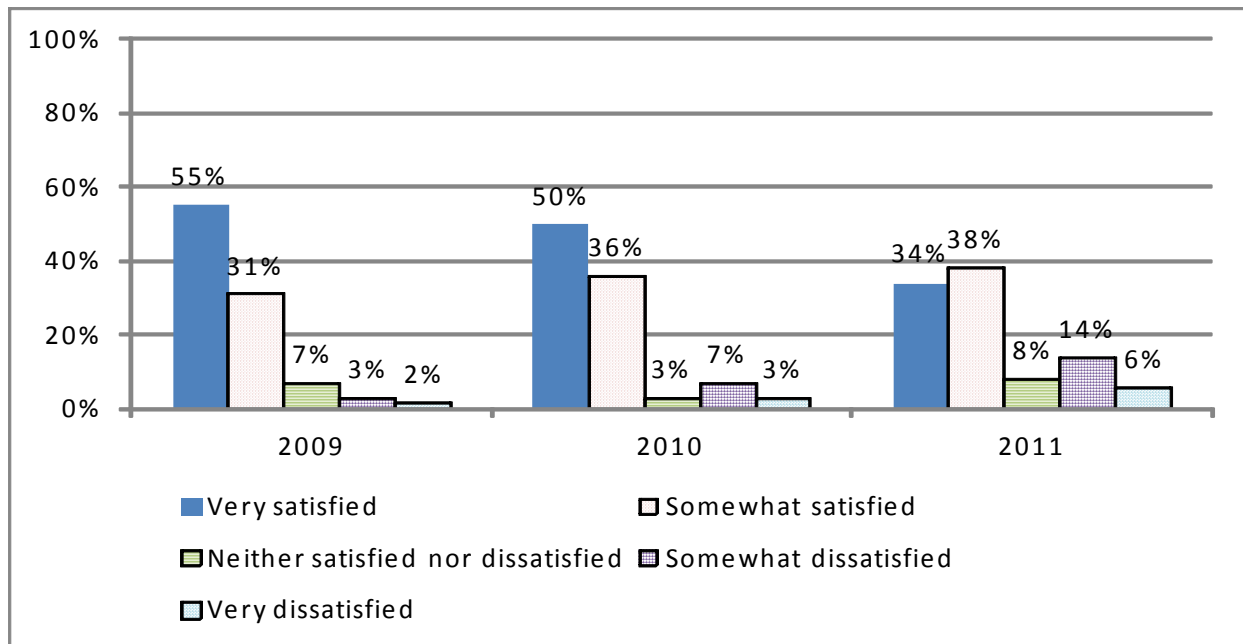
The price of CFLs has risen in the past year due to the scarcity of rare earth minerals, some of which are key components of CFLs.² The survey asked respondents who are somewhat or very familiar with CFLs if they had noticed a price increase and, if so, whether the increase had prevented them from buying CFLs. The majority of respondents who were somewhat or very familiar with CFLs (41%) had not noticed whether the price of CFLs had changed from last year to this year. In fact, 37% thought the price was the same or lower, and only 12% thought it was higher. Moreover, 29% of respondents who recently purchased CFLs were likely to say that the price was *lower* in the past year compared to just 13% who said the price was higher. It may be that consumers have not been directly exposed to the price increase because PA programs lower the price of bulbs on store shelves, or that they do not buy CFLs often enough to notice the prices. Of 53 respondents who had noticed a price increase, only 36% said it prevented them from buying a CFL.

Satisfaction with CFLs decreased in 2011, accelerating a trend first observed in 2010 (Figure ES-4). Having established that the weighting scheme and sampling approaches are not the cause

² DiClerico, Daniel. 2011. “Shortage of rare earth metals results in higher CFL prices.” *Consumer Reports*. September 16, 2011. Available at <http://news.consumerreports.org/appliances/2011/09/shortage-of-rare-earth-metals-stokes-controversy-around-cfls.html>.

of this findings, the Team posits two possible reasons for the lower levels of satisfaction with CFLs. First, negative media attention has highlighted some of the shortcomings of CFLs, and this appears to have successfully lowered consumer opinions of the bulbs. Second, the influx of A-line, screw-in LEDs and halogens to the market offers consumers more choices for energy-efficient bulbs, without many of the persistent concerns about mercury, light appearance, dimmability, and long warm-up times. In other words, now that they have a choice, consumers may find they are less satisfied with CFLs. We will continue to explore this issue in the second and third waves of the survey. When asked what they did like about CFLs, respondents—both those who are and are not satisfied with them—most often cited that they save energy, have a long bulb life, and save money on bills. In contrast, respondents are less happy with how slow CFLs are to brighten, mercury and disposal issues, and poor light output. For dimmable CFLs, respondents focused on the fact that these bulbs do not dim as much as other bulb types.

Figure ES-4: CFL Satisfaction, 2009 to 2011



Conclusions

This report, together with the sensitivity analysis, represents one of the earliest deliverables for the 2011 through 2013 evaluation activities in support of the Residential Retail Products evaluation area. Although we typically refrain from making recommendations until more evaluation tasks have been completed, a few key conclusions and related recommendations seem warranted based on the research presented here.

Conclusion 1: First, the survey provides evidence that customer satisfaction with CFLs continues to decline, but the reasons for the decline remain unclear.

Recommendation 1a: The Team will continue to track satisfaction with CFLs in the next two waves of the survey to be completed in mid- and late-2012. We will continue to

inquire what both satisfied and dissatisfied respondents like and do not like about CFLs in order to provide a more complete understanding of CFL satisfaction. We will also ask respondents if they have recently shifted their opinion about CFLs and why.

Recommendation 1b: The PAs have little direct control over the persistent concerns about CFLs. The fact that they contain mercury, cannot dim as well as other bulb types, emit a different quality of light, and take a while to warm up represents limitations of the technology. However, at least for dimmability, warm-up time, and light quality, some bulbs suffer from these problems more than others. The PAs may want to continue to work with the program partners to support the highest quality CFLs on the market, perhaps holding additional focus groups or doing other types of consumer research to identify which bulbs those might be.

Recommendation 1c: At this time, the LEDs on the market meant to replace 40 Watt and 60 Watt incandescents do not save much more energy than CFLs, but they do address at least some of the concerns with them, including concerns about mercury, dimmability, and warm-up time. Of course, they also cost more than CFLs. Therefore, in trying to increase adoption of LEDs, the PAs may want to consider educational materials that highlight these advantages of LEDs, but in a manner that does not add to the denigration of CFLs.

Conclusion 2: Respondents reported increased familiarity with all types of specialty bulbs, but the increase in familiarity was smallest for A-line, covered CFLs. These bulbs, however, closely resemble incandescents and can fit into some type of fixtures (*e.g.*, those in which the shade clips onto the bulb) that standard CFLs cannot.

Recommendation 2a: The PAs may consider increasing consumer education efforts regarding covered CFLs, as they are more difficult to distinguish from incandescents when simply looking at bulbs in the lighting aisle of the store. For example, signage at the point of purchase could note that the bulb is a CFL and that it can be used with a wider variety of fixtures.

Recommendation 2b: The PAs may also want to consider reclassifying this bulb from “specialty” to “covered standard”. Although the covered CFL is not the most common design, it does not have any “specialty” functions, such as being dimmable or fitting into a candelabra base. In fact, the covered CFL may offer the best opportunity to capture those customers who reject spirals for aesthetic or “fit in fixture” reasons. From an incentive and implementation perspective, the switch in classification may just be a matter of semantics, but from an evaluation and energy-savings perspective, the covered CFL is most accurately grouped with other A-line bulbs and not with specialty bulbs, because, at least in the short-term, covered CFLs will usually replace A-line incandescents—and perhaps spiral CFLs—and not specialty incandescents.

Conclusion 3: Users of dimmable CFLs generally tend to like them, but the most persistent complaint about them is that they do not dim consistently or as much as other types of light bulbs. Dimmable users also complain about warm-up time.

Recommendation 3: Satisfaction with the dimming capabilities of CFLs has been a persistent concern among consumers and many program administrators as well. Current indications are that screw-in LEDs dim more consistently and to a greater degree than dimmable CFLs. Therefore, the PAs may consider removing dimmable CFLs from the list of products they support, and turn instead to LEDs as their preferred dimmable technology.

Conclusion 4: The results presented here suggest that about one-fourth of respondents will consider stockpiling incandescent bulbs; in fact, evidence suggests that some of these respondents have already started to do so.

Recommendation 4: The PAs may want to consider placing a consumer education campaign that helps consumers make more informed bulb choices, rather than simply defaulting to the incandescent bulb with which they are most familiar. The best choice may not always be the most efficient one, but perhaps consumers who are considering stockpiling will learn that efficient bulb options to replace incandescents exist for nearly all of their lighting needs. Moreover, PA education on EISA and alternative bulb types may prevent consumers from first learning about EISA to choose efficient options over stockpiling or buying halogen bulbs.

Conclusion 5: While consumers are becoming more familiar with the term “lumens” and understand that it means light output or brightness, they still buy bulbs based on wattage or wattage equivalence. This behavior will likely continue until consumers become comfortable with recognizing that they need an 800 lumen bulb, for example, for one lighting need and a 1700 lumen bulb for another purpose.

Recommendation 5: The PAs may want to continue their efforts at helping consumers make the transition from thinking about Watts to thinking about lumens. Educational materials and point-of-purchase displays that show typical uses based on lumens provide one example.

1 Introduction

This report presents the findings of research conducted to understand the market for energy-efficient light bulbs, with particular emphasis on establishing a baseline at the onset of the changes in lighting standards resulting from the Energy Independence and Security Act of 2007 (EISA). The report presents the findings of a telephone survey conducted by the NMR Group, Inc. (NMR) and its subcontractor Tetra Tech, Inc. (here after the Team) from December 8, 2011 through January 19, 2012.^{3,4}

1.1 Background

The Team fielded the consumer surveys of households in Massachusetts in December 2011 and January 2012. The goal of the surveys was to track key indicators of the market for compact fluorescent lamps (CFLs), light emitting diodes (LEDs), and halogens as well as the impact of EISA. Many of these indicators provide information necessary to revise program savings estimates while others contribute to a broader assessment of the market at the onset of EISA implementation. The results will be compared to those for two later waves of the consumer survey, which will take place in mid and late 2012. The current survey was also used to recruit households for onsite saturation surveys, which will be summarized in a forthcoming report. Topics addressed in the first wave of consumer surveys included the following, some of which allowed for the continued monitoring of the market from earlier evaluations (*e.g.* awareness of CFLs):

- Awareness of and familiarity with spiral and specialty CFLs, LEDs, and halogens meant to replace A-line incandescent bulbs
- Awareness of and anticipated reaction to EISA
- Current use of CFLs and LEDs
- Satisfaction with CFLs and aspects of the bulbs that respondents like and dislike
- Recent light bulb purchases, particularly of 100 Watt incandescents to identify stockpiling of incandescent bulbs
- Familiarity with lighting terminology such as lumens and color temperature
- Household demographics

³ The consumer survey also included data collection on consumer electronics and plug load, and these results will be delivered in a separate report.

⁴ In previous years we have typically reported onsite saturation study results with those of the telephone survey. However, the onsite lighting saturation study was still in the field at the time of writing in February 2012, so results for that task will be summarized in a separate report, with expected delivery in April 2012.

1.2 Methodology

To implement the surveys, we first obtained a list of randomly selected customers of each of the five PAs and drew our sample from this list according to the “desired sample” column in Table 1–1 below. We sent an advance letter to potential respondents that explained the study’s objectives, asked for respondents’ cooperation, and provided a toll-free number in case the household wanted to schedule a specific time to answer the survey. When calling potential respondents, we used a minimum of ten attempts over different times of the day, days of the week, and weeks of the month in an effort to increase the response rate and achieve as representative a sample as possible. To further increase response rates and population coverage, we fielded the survey in Spanish as well as in English. After six weeks of calling, the Team decided that we would not achieve the full 600 surveys desired without reducing the response rate. Therefore, we finalized the survey at 582 completions, which is still adequate to meet 10% precision for the entire sample at the 90% confidence level, assuming a 50% break in responses. It also allowed us to meet our onsite recruitment goals. The sampling errors for individual PAs ranged from a low of 5% for National Grid to 26% for Unitil, due to its small population size.⁵ The overall response rate was 28% and no less than 23% for each PA. We performed 12 of the surveys in Spanish.

Table 1–1: Telephone Survey Sample

Program Administrator	Households Served	Desired Sample	Final Sample	Sampling Error	Response Rate
Cape Light Compact	201,991	42	35	14.1%	23.3%
National Grid	1,117,912	288	270	5.0%	32.0%
NSTAR	954,917	210	204	5.8%	26.3%
Unitil	40,087	12	11	26.0%	24.0%
WMECO	187,140	48	62	10.5%	26.7%
<i>Overall</i>	<i>2,502,047</i>	<i>600</i>	<i>582</i>	<i>3.0%</i>	<i>28.4%</i>

⁵ The overall error is the most important one to consider, given that the predominant markdown method was a statewide approach offered to all consumers, not just those of specific PA service territories.

To make sure we captured the perspectives of customers of each program administrator, the sample design drew slightly more households from the three program administrators (treated collectively) with fewer households in their territory. This required that we weight the data back to the actual proportions of households in each program administrator’s service territory so that the results accurately represent all customers in the state. Table 1–2 presents this weighting scheme.⁶

Table 1–2: Population, Sample Sizes, and Weights for RDD Survey

	Households	Sample Size	Weight
<i>State Total</i>	2,502,047	582	<i>n/a</i>
Cape Light Compact	201,991	35	1.34
National Grid	1,117,912	270	0.96
NSTAR	954,917	204	1.09
Unitil	40,087	11	0.85
WMECO	187,140	62	0.70

1.3 Comparability with Previous Studies

The Team fielded previous surveys in 2009 and 2010 also meant to assess the market for energy efficient lighting.⁷ The 2009 survey identified respondents through a random digit dial (RDD) survey of landlines, and the Team weighted the data by education and home ownership. In 2010, the Team again turned to an RDD survey, but we included both landlines and cell phone numbers in an effort to identify “hard-to-reach” customers; the data were again weighted by education and home ownership. While allowing us to identify a diversity of households, the RDD approach was expensive for three primary reasons:

1. Some numbers were no longer in service
2. Some numbers were not eligible (*e.g.*, they were businesses)
3. We achieved less than one completion per hour of calling

For the 2011 survey, the Team recommended using a customer list, paired with an advance letter introducing the study, instead of an RDD approach. We recognized that this approach would mean that we would reach fewer renters—particularly those in master-metered buildings—and that the comparability across years would be somewhat compromised. Furthermore, because we based our sample on the distribution of households across the state by PA, the weighting scheme

⁶ Although this weighting scheme differs from those used in 2009 and 2010 (based on education and home ownership due to the reliance on a random digit dial survey), tests conducted by the Team verify that the use of different schemes do not underlie observed differences among the samples.

⁷ NMR. 2010. *The Market for CFLs in Massachusetts*. Delivered to the Massachusetts Program Administrators on January 28. NMR 2011. *Results of the Massachusetts and Pennington County, South Dakota Telephone and Onsite Compact Fluorescent Lamp Surveys*. Delivered to the Massachusetts Energy Efficiency Advisor Council Consultants and Program Administrators on April 15.

in 2011 was also based on PA distribution, introducing another threat to comparability across years. Yet, we believed that the benefits of reduced cost, higher response rate, and increased customer awareness of the study outweighed these potential drawbacks.

The Team believes that the use of customer lists and advance letters facilitated not only higher completion and response rates, but a greater proportion of respondents also expressed interest in the onsite portion of the study than in 2009 and 2010. However, the threats to comparability across years remained, and preliminary analyses that pointed to unexpected results led us to examine the potential impact of the different sampling approach and weighting scheme on the results. This examination involved two different approaches. First, we ran the demographic characteristics and key lighting market indicators *unweighted*; the comparison of unweighted data more readily allows us to identify any biases in the samples. Second, we reanalyzed key lighting indicators and demographic variables from the 2010 survey broken out by cell phone and landline respondents; this analysis also relied on unweighted data.

The analysis of demographic characteristics and key market indicators using unweighted data revealed three important and related findings. The first two findings involve demographic characteristics. 1) The unweighted comparison of demographic data show that the 2009, 2010, and 2011 samples are remarkably similar in their demographic makeup despite the different sampling approaches, so differences in the demographic characteristics of respondents do not explain unexpected results, and 2) The use of a divergent weighting scheme in 2011, however, made it *appear* that the demographics differed across years when the data were weighted, so we have decided to report all demographic data, including for 2009 and 2010 as well as 2011, unweighted in Section 8: Customer Demographics. The third finding relates to the lighting market indicators: 3) The analysis of unweighted data for market indicators reveals that the unexpected findings persist when the weights are removed; in fact, even though the weighting schemes differed, weighting the data creates only small changes in the results. This is because opinions and behavior regarding the lighting market do not vary systematically across demographic groups in Massachusetts.⁸ We present the comparisons of weighted and unweighted data for key lighting market indicators in [Appendix A](#).

Despite the fact that the Team believes that the weighting scheme and alternative sampling approach used in this report have not greatly affected the findings regarding the lighting market, we still urge caution in comparing data across 2009, 2010, and 2011. We present these comparisons, but we do not test their statistical significance, as such tests would require more similar approaches than used here. Moreover, in the second and third waves of this survey, the Team will employ a weighting scheme that is comparable to those used in 2009 and 2010 in order to facilitate comparisons across years.

In an effort to increase our understanding of the factors that underlie some of the unexpected results in the 2011 survey, the Team also suggests adding a question in the second wave of the

⁸ This is also one of the conclusions of the hard-to-reach analysis, as reported in NMR 2010.

survey that asks long-time CFL users if their opinion of the technology has changed over time, and, if so, how and why it has changed. This could help explain why reported familiarity, use, and satisfaction with the technology appear to have declined over time. Finally, it may also be possible to perform a “split sample” in which some respondents are drawn from a customer list and others are drawn from random digit dial landline and cell phone samples. This approach would require an increase in budget, but would also help us determine if the use of different sampling approaches underlies the unexpected trends in market indicators.

2 Awareness of Energy-Saving Light Bulbs and EISA

The survey assessed respondents' awareness of and familiarity with CFLs and other energy-saving bulb types. These questions supplied necessary context for understanding respondents' knowledge of various lighting technologies and allowed us to target questions about particular bulb types to those respondents most able to provide informed opinions on them. When possible, we compared the responses to questions on awareness and familiarity with similar ones from the 2009 and 2010 Massachusetts consumer survey, although, as mentioned above, we caution that the different sampling approaches and weighting schemes suggest caution when interpreting the meaning of data across year.⁹ We also asked respondents whether they were aware of the EISA light bulb efficiency provisions, but we do not compare results to questions from previous years due to substantial changes in the wording of the question in the 2011 questionnaire compared to the 2009 and 2010 questionnaires.

2.1 CFL Awareness and Familiarity

Nearly all respondents in 2011 (93%) indicated that they were aware of CFLs before responding to the survey (Table 2-1). This represents an increase in awareness from the 2009 survey (87%) but is not very different from awareness rates in 2010.

Table 2-1: Awareness of CFLs

(Base: All respondents)

Awareness	2009	2010	2011
<i>Sample size</i>	503	381	582
Yes	87%	94%	93%
No	13	6	6
Don't know/refused	-	-	<1

⁹ Even though caution is warranted, the Team stresses that our analyses have not provided any evidence that the weighting scheme or sampling approaches greatly biased the results from any of the years included in the comparison. See Section 8 and [Appendix A](#) for more details.

About three out of every four respondents in 2011 indicated that they were somewhat or very familiar with CFLs (Table 2–2). However, we also observed a decrease in the percentage of respondents who reported being “very familiar” with CFLs in 2011 (34%) compared to 2010 (42%); percentages of very familiar respondents were similar in 2009 and 2011. The findings also point to an increase in the percentage of respondents saying that they were “not too familiar” with CFLs. This unexpected finding is among those we explored in more detail in our analysis of the impacts of the different weighting scheme and sampling approach, concluding that these differences did not explain the finding. It is important to note here that familiarity is not the only question that showed unexpected changes across the three years; CFL use (Section 3.1.1) and satisfaction (Section 7.2) display similar patterns. The Team will explore possible reasons for these findings in the second and third wave of the surveys.

Table 2–2: Familiarity with CFLs

(Base: All respondents)

Familiarity with CFLs	2009	2010	2011
<i>Sample size</i>	503	381	582
Very familiar	32%	42%	34%
Somewhat familiar	39	38	40
Not too familiar	11	9	16 ^Ω
Not at all familiar	5	5	4
Not aware of CFLs	13	6	6
Don't know / refused	1	0	<1

The survey also asked respondents about their familiarity with various types of specialty CFLs, including dimmable, 3-way, flood/recessed, candelabra, globe, and A-line. These levels of familiarity are shown in Table 2–3 on the next page, along with comparisons to familiarity for the same bulb types in 2010. Overall, familiarity with specialty CFLs was higher in 2011 than it was in 2010. A greater proportion of respondents in 2011 than in 2010 indicated being very familiar or somewhat familiar with all types of specialty CFLs. Thus, although respondents reported lower levels of familiarity with standard CFLs in 2011 when compared to 2010, familiarity with specialty CFLs seems to be on the rise. Again, this could relate to differences in the sample composition, but it is most likely due to the increased attention that the PAs and retailers have given to the diversity of light bulb choices and to the increased availability of specialty bulbs on store shelves.

Table 2-3: Familiarity with Specialty CFLs

(Base: Respondents who had heard of CFLs and were very, somewhat or not too familiar with CFLs)

Type of Specialty CFL	Familiarity	2010	2011
		<i>Sample Size</i>	381
Dimmable	Very familiar	12%	18%
	Somewhat familiar	19	23
	Not too familiar	14	13
	Not at all familiar	44	3
	Not aware of CFLs	11	10
	Don't know / refused	<1	1
3-way	Very familiar	16%	18%
	Somewhat familiar	20	25
	Not too familiar	15	13
	Not at all familiar	36	33
	Not aware of CFLs	11	10
	Don't know / refused	<1	1
Flood or Recessed	Very familiar	16%	25%
	Somewhat familiar	16	24
	Not too familiar	13	13
	Not at all familiar	41	27
	Not aware of CFLs	11	10
	Don't know / refused	3	1
Candelabra	Very familiar	9%	15%
	Somewhat familiar	17	21
	Not too familiar	13	15
	Not at all familiar	48	38
	Not aware of CFLs	11	10
	Don't know / refused	1	1
Globe	Very familiar	18%	23%
	Somewhat familiar	24	25
	Not too familiar	13	15
	Not at all familiar	33	27
	Not aware of CFLs	11	10
	Don't know / refused	<1	<1
A-line	Very familiar	14%	15%
	Somewhat familiar	14	18
	Not too familiar	16	13
	Not at all familiar	44	43
	Not aware of CFLs	11	10
	Don't know / refused	1	1

2.2 Familiarity with other Energy-Savings Bulbs

The year of 2011 saw an influx of screw-in, A-line, light emitting diodes (LEDs) and halogen bulbs (sometimes called energy-efficient incandescents) to the lighting market that were meant to replace incandescent bulbs. For this reason, the 2011 survey assessed not only familiarity with CFLs, but also with these other energy-saving bulb types as well. Close to one-half (47%) of all respondents reported being very familiar or somewhat familiar with LEDs, and 70% reported being very or somewhat familiar with halogens (Table 2–4). The team cautions that the percentage of respondents familiar with halogens seems high, at least based on prior focus group research conducted by NMR in Connecticut.¹⁰ The findings from the focus groups indicated that consumers are familiar with certain types of halogen bulbs, including those used in torchieres (frequently remembered as a fire hazard) or as screw-in flood or spotlight bulbs. Yet, very few of the Connecticut focus group participants were familiar with the newest generation of halogen bulbs that closely resemble an incandescent bulb. Based on this prior research, it is the Team’s opinion that respondents to the 2011 Massachusetts consumer survey may have been indicating their familiarity with other types of halogens—not with those meant to replace incandescents.

Table 2–4: Familiarity with Energy-Saving Bulb Types 2011

(Base: All respondents)

Familiarity	CFLs	LEDs	Halogen Bulbs
<i>Sample size</i>	582	582	582
Very familiar	34%	19%	34%
Somewhat familiar	40	28	36
Not too familiar	16	24	14
Not at all familiar	10	29	15
Don’t know / refused	<1	1	1

¹⁰ NMR Group, Inc. 2011. “Connecticut Lighting Focus Groups: Exploration of Market and Reactions to Various Efficient Lighting Choices.”

Available at <http://www.ctenergyinfo.com/111121%20EISA%20Lighting%20Focus%20Groups%20Report.pdf>

As a further assessment of energy-saving bulb awareness and familiarity, respondents who were somewhat or very familiar with both CFLs and halogens were asked which bulb type used less energy to produce light. Although we must caution that some respondents may have had the wrong type of halogen in mind when answering this question, the majority of respondents (76%) correctly said that CFLs use less energy than halogen bulbs (Table 2–5), indicating the respondents’ knowledge of energy-saving bulb types goes beyond simple awareness of the bulbs’ existence. The remaining respondents were evenly split between thinking halogens use less energy, that the two bulbs use the same amount of energy, and being uncertain of which bulb uses less. Comparing respondents who self-reported being “very familiar” or “somewhat familiar” with CFLs reveals that those most familiar with CFLs more frequently identified the CFL as the lower energy user of the two (82% for very familiar vs. 70% for somewhat familiar). Those somewhat familiar with CFLs also tended to choose the CFL, but, a greater proportion of these respondents instead thought that the two bulbs used about the same amount of energy (13% somewhat familiar vs. 4% very familiar).

Table 2–5: Respondents’ Judgments about Relative Energy Use of CFLs & Halogen Bulbs
(Base: Respondents who were somewhat or very familiar with both CFL and Halogen bulbs)

Which bulb uses less energy	Overall 2011	Very Familiar with CFLs	Somewhat Familiar with CFLs
<i>Sample size</i>	327	156	171
CFLs use less energy	76%	82%	70% ^Ω
Halogen bulbs use less energy	8	7	8
They use about the same	8	4*	13 ^Ω
Don’t know/refused	8	7	9

* Significantly different from Overall at the 90% confidence level.
Ω Significantly different from ‘Very Familiar’ at the 90% confidence level.

2.3 Awareness of EISA

The survey also asked respondents’ about their awareness of the EISA legislation that bans most incandescent light bulbs. More than one-half of all respondents had heard of EISA (57%). The remaining respondents (43%) were not familiar with EISA (Table 2–6). Various sections later in this report address information regarding current and likely consumer responses to EISA, including possible stockpiling behavior (Section 6.2) and probable bulb purchases in response to EISA (Section 6.1).

Table 2–6: Awareness of EISA Law
(Base: All Respondents)

Have heard about EISA law	
<i>Sample size</i>	582
Yes	57%
No	43
Don’t know/refused	0

3 Use of Various Lighting Technologies

The survey queried respondents about their past and current uses of various lighting technologies. These questions served three purposes. First, they established the types of bulbs customers self-reported using at the very start of the EISA implementation period.¹¹ Second, they provided insight into why customers choose to use or not to use certain types of lighting products as well as how they used the products they did have installed. Finally, the questions helped us determine which respondents had the knowledge and experience necessary to answer more in-depth questions about bulb purchase habits, a topic addressed in Section 4.

3.1 Incandescent Bulb Use

In May 2010, the PAs asked the Team to estimate the current saturation of incandescent bulbs that would be subject to EISA regulations. This analysis, based on technician verified counts of bulbs found onsite, revealed that only about 5% of the sockets in Massachusetts currently contained 100 Watt incandescent bulbs.¹² Therefore, before the Team could ask current survey respondents about their recent experiences shopping for incandescent bulbs during the earliest phases of EISA implementation, we first had to establish whether the respondents actually used 100 Watt incandescents. Only 34% of the 2011 survey respondents self-reported that they currently have any 100 Watt incandescent bulbs installed in their home (Table 3–1).

Table 3–1: 100 Watt Incandescent Bulbs Installed in Home

(Base: All Respondents)

Response	
<i>Sample size</i>	582
Yes	34%
No	60%
Don't know/refused	6%

¹¹ The onsite saturation survey will also provide information on this baseline, but as verified by a trained technician.

¹² Correspondence among Angela Li (National Grid), Lisa Wilson-Wright (NMR), and Susan Oman (NMR) on May 26, 2011.

The most common reason given for why respondents did not use 100 Watt incandescents was that the bulbs use too much energy (28%), with another 17% specifically noting they preferred to use more energy-efficient types of bulbs (Table 3–2). Other responses mentioned by more than 10% of respondents included that the incandescent bulbs were too bright (23%), that the respondent did not feel the need to use them (16%), or that the respondent preferred to use a lower wattage incandescent (11%). Note that a handful of respondents (1%) specifically cited EISA as a reason they that they did not use 100 Watt incandescents.

Table 3–2: Reasons 100 Watt Incandescent Bulbs Not Installed in Home

(Base: Respondents who do not currently use 100 Watt incandescent bulbs in their homes)

Reasons (Multiple Response)	
<i>Sample size</i>	350
They use too much energy	28%
They are too bright	23%
I use CFLs/halogens/efficient lighting	17%
Don't need them	16%
Prefer to use a lower wattage incandescent	11%
My socket says only to use a certain Watt bulb/ fixtures won't take such high wattage	7%
Cost too much/want to save money	6%
They are bad for the environment/not energy conscious	2%
Because of EISA	1%
Landlord chose bulbs/bulbs were already here	1%
They don't last long/short bulb life	1%
Other	2%
Don't know/refused	5%

To get a sense of whether respondents still used incandescents, even if they did not use the 100 Watt variety, respondents who did not have a 100 Watt bulb installed revealed whether they had *any* incandescents installed. The majority of respondents who did not use 100 Watt incandescents (68%) self-reported that they did use other wattages of incandescent bulbs (Table 3–3). However, 29% of respondents who did not use 100 Watt incandescents also reported that they did not use incandescents whatsoever. Looking at the entire sample and taking into account use of 100 Watt incandescents (or lack thereof), 79% of respondents said that they used at least some wattage incandescents in their home. The forthcoming onsite saturation study will provide additional information on penetration (households with each bulb type) and saturation (sockets holding bulbs of each type).

Table 3–3: Any Incandescent Bulbs Installed in Home

(Base: Respondents who do not currently use 100 Watt incandescent bulbs in their homes and all respondents)

Incandescent bulbs installed	Households not Using 100 Watt Incandescents	All Households
<i>Sample size</i>	387	582
Yes	68%	79%
No	29	19
Don't know/refused	3	2
Currently using 100 Watt incandescent	0	0

3.1.1 CFL Bulb Use

The survey also explored historic and current CFL use, comparing the results to those from 2009 and 2010 when possible. In the current survey, 67% of respondents had CFLs installed in their homes at some point—a similar percentage to 2009, but a decrease from 2010, when 78% of respondents indicated having had CFLs installed (Table 3–4). Similarly, 19% of respondents in 2011 revealed never having had CFLs installed, an increase over 2009 and 2010 (Table 3–4).

Table 3–4: CFLs Ever Installed in Home

(Base: All respondents)

Have Ever Used a CFL	2009	2010	2011
<i>Sample size</i>	503	381	582
Yes	68%	78%	67%
No	12	11	19
Don't know/Refused	1	<1	4
Not aware of / familiar with CFLs	19	11	10

The current and prior surveys also asked respondents to self-report whether they currently use any CFLs in the home. In the current sample, 61% of respondents had CFLs installed, which represents a decrease from the 2010 sample, in which 72% of respondents had CFLs (Table 3–5).

Table 3–5: CFLs Currently Installed in Home

(Base: All respondents)

Currently Have CFLs Installed	2009	2010	2011
<i>Sample Size</i>	503	381	582
Yes	64%	72%	61%
No	3	6	5
Don't know / refused	1	0	1
Not aware of / familiar with CFLs*	32	22	33

*Includes respondents who said they did not know if they ever used a CFL.

The differences observed in Table 3–4 and Table 3–5 are unexpected, and we explored these questions in our assessment of the possible differences that sampling approaches and weighting schemes had on observed findings over time. However, our analyses have yet to provide conclusive evidence for the changing response patterns over time, and we will continue to explore this question and possible explanations in the second and third waves of the survey. Some possible explanations include a reaction to the media attention given to CFLs, as consumer opinion and survey responses are sensitive to media stories, many of which have been negative.¹³ It is important to keep in mind, however, that the data in Table 3–4 and Table 3–5 are based on self-reports during a telephone survey. The onsite saturation study will provide a clearer understanding than the telephone survey of current rates of CFL use and saturation—and changes in these rates over time.

Respondents also self-reported their use of dimmable CFLs. Most respondents (82%) did not have dimmable CFLs installed, but 18% utilized dimmable CFLs in their homes (Table 3–6).

Table 3–6: Use of Dimmable CFLs in the Home

(Base: All respondents)

Dimmable CFLs currently installed	
<i>Sample size</i>	582
Yes	18%
No	82
Don't know/Refused	1

¹³ For example, see Teitell, Beth. 2011. “Dim view of lighting law.” *Boston Globe*. August 4, 2011. Available at http://www.boston.com/news/science/articles/2011/08/04/consumers_hoarding_light_bulbs Ahead_of_federal_phase_out/

3.2 Alternative Lighting Technologies

The 2011 survey established baseline use of the types of screw-in LEDs meant to replace incandescent bulbs. Only 16% of respondents had LED screw-in bulbs currently installed in their homes (Table 3–6). This is a smaller percentage than those who use CFLs (61%) or incandescents (79%) are as reported earlier.

Table 3–7: LED Screw-In Bulbs Installed in Home

(Base: All respondents)

LED currently installed	
<i>Sample size</i>	582
Yes	16%
No	82
Don't know/Refused	3

Respondents who did have screw-in LEDs currently installed also described the types of fixtures they were installed in. The most frequent response was floor, table, and portable lamps, named by almost one-half the sample (49%) (Table 4–7). The other common responses were ceiling flush mounts, recessed cans, and ceiling fans with lighting.

Table 3–8: Types of Fixtures with Installed LED Bulbs in Home

(Base: Respondents who said they had an LED screw-in bulb installed in their home)

Fixture type	
<i>Sample size</i>	94
Floor/Table/Portable lamps	49%
Ceiling flush mount	13
Recessed can	11
Ceiling fans with lighting	9
Chandeliers	7
Wall mounted	7
Outdoor	6
Kitchen/refrigerator/stove	5
Vanity	4
Multiple rooms/fixtures	3
Pendants/Hanging	2
Overhead lighting	2
Ambient/low lighting	2
Track lighting	1
Holiday lighting/candle	1
Cabinet fixtures	1
Other	6
Don't know/Refused	4

4 Recent Lighting Purchases

The team fielded the consumer survey in late 2011 and early 2012, just at the time of EISA implementation of the phase-out of 100 Watt incandescent bulbs. We included questions in the survey about recent experiences shopping for light bulbs in order to establish a baseline at the onset of EISA implementation about preferences for certain bulb types and likely consumer reactions to the phase-out of most incandescent bulbs. Consumer surveys to be completed in June and December of 2012 will repeat these questions and expand them to query about the phase-out of 75 Watt incandescent bulbs.

4.1 Recent Purchase History of Incandescent Bulbs

In order to assess whether respondents had noticed any changes in the availability of 100 Watt incandescent bulbs, we asked whether they had looked for 100 Watt incandescent bulbs in the past three months. Those who had shopped for 100 Watt incandescent bulbs were then asked a series of questions about their shopping and purchasing experiences.

4.1.1 Shopping for 100 Watt Incandescent Bulbs

Only 15% of respondents indicated that they had shopped for 100 Watt incandescent bulbs in the past three months (Table 4–1). However, it should be remembered that only 34% of households use 100 Watt incandescent bulbs, so it is not surprising to find so few respondents shopping for them in the past three months (see Table 3–1 above).

Table 4–1: Whether Respondents Had Looked for 100 Watt Incandescents in the Past Three Months

(Base: All respondents)

Looked for 100 Watt incandescent bulbs in past 3 months	
<i>Sample size</i>	582
Yes	15%
No	84
Don't know/Refused	1

Those respondents who had looked for 100 Watt incandescent bulbs then indicated whether they had been successful in their attempt to purchase them. Although the EISA lighting regulations were not implemented until partway through the survey period, some manufacturers and retailers had already stopped producing, shipping, and stocking 100 Watt incandescents prior to January 1, 2012, in preparation for EISA. It was therefore possible that consumers would have had a more difficult time finding 100 Watt incandescents in the last quarter of 2011. Nevertheless, almost three-fourths (74%) of the respondents who had attempted to purchase these bulbs found them on store shelves (Table 4–2). This result for Massachusetts is consistent with anecdotal evidence from California, which implemented EISA a year early, that 100 Watt incandescent bulbs were widely available in that state for at least six months and perhaps even longer after the beginning of the phase-out. If the California experience holds for Massachusetts as well, future surveys may not report decreased 100 Watt availability until late 2012, and possibly early 2013.

Table 4–2: Whether Respondents Had Found 100 Watt Incandescent Bulbs on Retailers Shelves in the Past Three Months

(Base: Respondents who said they had looked for 100 Watt incandescent in the past three months)

Response	
<i>Sample size</i>	84
Yes – went to a store and found them on the shelves	74%
No – went to a store and could NOT find them on the shelves	17
Don't know/Refused	8

The few respondents who did not find 100 Watt incandescent bulbs on retailer's shelves in their first attempt noted whether they had looked elsewhere for the bulbs. Two respondents went to another store to find the bulbs, and did so successfully (Table 4–3). The majority, however, did not go to another store or otherwise try to locate the bulbs further.

Table 4–3: Whether Respondents Had Looked Elsewhere for 100 Watt Incandescent Bulbs If Not Found at Retailer

(Base: Respondents who had looked for 100 Watt incandescent in the past three months but had not found them)

Looked for 100 Watt incandescents elsewhere	
<i>Sample size</i>	14
Yes, went to another store	2
Yes, went to look on the internet	0
Yes, both stores and internet	0
No, did not go to another store or look on the internet	12

4.1.2 Types of Bulbs Purchased when Shopping for 100 Watt Incandescents

Of the respondents who had found 100 Watt incandescent bulbs on store shelves in the past three months, 67% reported purchasing those bulbs (Table 4–4).

Table 4–4: 100 Watt Incandescent Bulbs Purchased in Past Three Months

(Base: Respondents who said they had found 100 Watt incandescent in a retail store or elsewhere)

Purchased 100 Watt incandescent in past 3 months	
<i>Sample size</i>	71
Yes	67%
No	30
Don't know/Refused	3

The 22 respondents who had not found 100 Watt incandescent bulbs (a very small subset of the entire sample) also reported whether they had purchased other light bulbs instead of the 100 Watt incandescent in the past three months. Twelve of these respondents indicated that they had purchased a different type of light bulb (Table 4–5).

Table 4–5: Whether Purchased Light Bulbs Instead of 100 Watt Incandescent in Past Three Months

(Base: Respondents who said they had not found 100 Watt incandescents in a retail store or elsewhere)

Purchased instead of 100 Watt incandescent in past 3 months	
<i>Sample size</i>	22
Yes	12
No	9
Don't know/Refused	1

The 12 respondents who bought a different type of light bulb most often chose CFLs instead of incandescents (nine respondents), followed closely by an incandescent bulb of another wattage (eight respondents) (Table 4–6). Four respondents also mentioned halogens and one named an LED. A couple respondents also said they purchased bulbs not meant to replace 100 Watt incandescents (*i.e.*, night lights and spotlights), suggesting that they told the interviewer all the types they purchased, not just those bought in place of a 100 Watt. Note that the totals sum to more than 12 responses because some respondents purchased more than one type of bulb instead of an incandescent.

Table 4–6: Type of Bulb Purchased Instead of 100 Watt Incandescent

(Base: Respondents who said they had not purchased a 100 Watt incandescent in the past three months)

Type of Bulb (Multiple Response)	
<i>Sample size</i>	12
CFLs	9
Incandescent bulbs of another wattage	8
Halogen bulbs	4
LEDs	1
Night Light, spotlights	2
Don't know/Refused	0

The eight respondents who reported purchasing an incandescent bulb of another wattage also reported what wattage bulb they chose; again, the total number of responses sums to more than eight because respondents bought more than one wattage of incandescent. The majority of respondents indicated choosing a lower wattage incandescent bulb than the 100 Watt they had been looking for, although one respondent purchased a 150 Watt incandescent (Table 4–7).

Table 4–7: Wattage of Incandescent Bulb Bought Instead of 100 Watt Incandescent

(Base: Respondents who said they had purchased an incandescent bulb of another wattage)

Wattage (Multiple Response)	
<i>Sample size</i>	8
75 Watt	4
60 Watt	3
40 Watt	2
25 Watt	1
150 Watt	1
3-way	1
Don't know/Refused	0

4.2 Purchase of All Types of Light Bulbs

The survey also asked about the purchase of all types of light bulbs, not just 100 Watt incandescents. Including the actual purchase behavior of the respondents discussed above who had at least shopped for 100 Watt incandescent bulbs, we find that 52% of respondents purchased some type of light bulb in the past three months (Table 4–8).

Table 4–8: Light Bulb Purchases in the Past Three Months

(Base: All respondents)

Purchased a bulb in past 3 months	
<i>Sample size</i>	582
Yes	52%
No	47
Don't know/Refused	1

Table 4–9 summarizes the types of bulbs purchased by respondents that had bought bulbs in the past three months, including those discussed in Section 4.1.2. Note that only respondents who had previously reported familiarity with the relevant bulb type were asked these items. Therefore, it is possible that respondents purchased more bulbs than indicated here, but we could not inquire about these purchases as they had not indicated familiarity with all bulb types. Although sample sizes differed between several of the bulb types examined, the highest recorded percentage of purchases were for CFLs (62% of aware purchasers, 27% of all respondents), and incandescent bulbs (55% of purchasers, 34% of all respondents). Halogen bulbs (23% of aware purchasers, 10% of all respondents), pin-based fluorescent tubes (19% of purchasers, 10% of all respondents), and LEDs (16% of aware purchasers, 5% of all respondents) were also popular choices.

Table 4–9: Type of Bulb Purchased in the Past Three Months

(Base: Respondents who said they had purchased any light bulbs in the past three months and were aware of relevant bulb type and all respondents)

Type of Bulb (Multiple Response)	Sample Size	Percent of Respondents Asked Question	Percent of All Respondents (n = 582)
CFLs that screw into regular light sockets	250	62%	27%
Incandescent or regular light bulbs	359	55%	34%
Halogen bulbs that screw into regular light sockets	236	23%	10%
Pin-based fluorescent tubes that can only be used in fluorescent light fixtures	300	19%	10%
LEDs that screw into regular light sockets	164	16%	5%
Pin-based CFLs that can only be used in special light fixtures	300	11%	6%
Pin-based LEDs that can only be used in special light fixtures	300	6%	3%
Other bulbs mentioned			
Pin-based Halogens	4	N/A*	N/A*
Flood lights	7		
Strip or under cabinet LED	2		
Holiday/string lighting	3		
Automotive bulbs/headlights	3		
Bulb for recessed lighting	3		
High pressure sodium lights	1		
Other	5		

* Number of respondents naming other bulbs types is too small to report percentages.

5 Key Lighting Concepts

The gradual phase-out of most incandescent bulbs will likely change the way that consumers shop for light bulbs. Instead of searching for “100 Watt” bulbs and their equivalents, consumers will instead be presented with labels and educational materials that reference lumens, color temperature, annual operating costs, and other bulb life. The survey included multiple questions to gauge what consumers currently consider when buying light bulbs and their knowledge of key lighting concepts.

5.1 Information Considered when Buying Light Bulbs

We asked respondents two questions about the type of information that they currently look for on bulb packing when buying light bulbs; the first question was open-ended, allowing the consumer to name any information they desired, while the second asked about specific characteristics. For example, if a respondent had not mentioned “price” during the unprompted portion, they were later asked if the price of the bulb is something they actually do look for. We report both the percentage of the entire sample who gave each response unprompted, and the percentage of the entire sample who gave each response when prompted. The most popular unprompted response was the wattage of the bulb (53%) which was also mentioned by 42% of respondents in the prompted follow-up (Table 5–1 on the next page). In fact, wattage was the only characteristic mentioned more frequently unprompted than prompted by the interviewer. This suggests that educational campaigns and information at the point of purchase will be vital in helping consumers transition from a focus on the familiar incandescent wattage to lumens when purchasing bulbs. Also mentioned with high frequency both unprompted and prompted were the price (25% and 66% respectively) and the bulb life (16% and 52% respectively). Prompted, respondents also noted that they looked for wattage equivalency (70%), bulb shape (62%), and the ENERGY STAR label (57%).

Table 5–1: Information Looked for on Bulb Packaging

(Base: All respondents)

Information on packaging (Multiple Response)	Unprompted Response	Prompted Response	Total Prompted and Unprompted
<i>Sample Size</i>	582	582	582
Wattage	53%	42%	95%
Price	25%	66%	91%
Watt equivalency	6%	70%	76%
Bulb life	16%	52%	68%
Shape	4%	62%	66%
ENERGY STAR label	5%	57%	62%
Color appearance, color temperature, Kelvin	8%	51%	59%
3-way	1%	41%	42%
Lumens, brightness, light output	13%	23%	36%
Dimming	2%	30%	32%
UL, or Underwriters Laboratories label	1%	24%	25%
Lighting facts/energy facts label	3%	19%	22%
CRI, or color rendition index	2%	15%	17%
Mercury content	1%	14%	15%
Energy usage/energy efficiency/savings on bill	8%	N/A	8%
Bulb size, base size	7%	N/A	7%
Brand	4%	N/A	4%
Matches bulb being replaced, appropriate for my needs	4%	N/A	4%
Type of bulb	3%	N/A	3%
Where made	2%	N/A	2%
Environmentally friendly	1%	N/A	1%
Nothing	1%	N/A	1%
Savings on energy bill	<1%	N/A	<1%
Incandescent only	<1%	N/A	<1%
Don't know/Refused	4%	N/A	4%
Other	4%	N/A	4%

5.2 Lumens and Color Temperature

The survey included questions to assess respondents' knowledge of two key lighting concepts—lumens and color appearance. Specifically, the survey asked whether respondents had seen or heard of the term “lumens” or “warm white” and “cool white” in relation to lighting. The majority of respondents (64%) indicated that they had seen or heard the term lumens, while 74% had seen or heard of the terms warm white and cool white (Table 5–2).

Table 5–2: Whether Respondents Had Seen or Heard the Term “Lumens”
(Base: All Respondents)

	Have Heard of Lumens	Have Heard “Warm White” and “Cool White”
<i>Sample size</i>	582	582
Yes	64%	74%
No	35	26
Don't know/Refused	1	<1

Just because the majority of respondents had heard these key lighting terms before the survey does not mean that they understand what they mean. For this reason, we asked those respondents who had seen or heard of the terms lumens, warm white, and cool white to define them. Table 5–3 shows that the majority of respondents familiar with the term lumens (77% of those asked or 49% of all 582 respondents) correctly understood that the term refers to light output or brightness.

Table 5–3: Understanding of the Term “Lumens”
(Base: Respondents who said they had seen or heard the term “lumens”)

Respondents' understanding of “lumens” (Multiple Response)	
<i>Sample size</i>	370
Light output or brightness	77%
Unit of measure of lighting	2%
Distance light will penetrate	2%
Candlelight	2%
Light color	1%
The same as Watts	1%
Quality of light	1%
Energy emitted	1%
Efficiency	<1%
Other	3%
Don't know/Refused	16%

As with the term “lumens,” those respondents who had heard the terms “warm white” and “cool white” also demonstrated a strong understanding of the term (92% of those asked or 67% of all 582 respondents), noting that it referred to the appearance of the light using such terms as “soft versus harsh light,” “sunlight or daylight,” “one is bluish and the other is yellow or whiter light,” or even, for a few, “Kelvins” (Table 5–4).

Table 5–4: Understanding of the Terms “Warm White” and “Cool White”

(Base: Respondents who said they had seen or heard the terms “warm white” and “cool white”)

Respondents’ understanding of “warm white” and “cool white” – as in the color white (Multiple Response)	
<i>Sample size</i>	426
Color appearance	92%
Heat of the bulb	5%
Fluorescent/one resembles fluorescent light	3%
Relates to your eyes/how your eyes perceive the light	2%
Wavelength spectrum of the light	2%
Coated vs. clear bulb	1%
The way you look in the bulbs light	<1%
Other	3%
Don’t know/Refused	12%

6 Potential Reactions to EISA

The survey asked a series of questions to ascertain respondents’ likely bulb choice after 100 Watt incandescent bulbs are no longer available. The Team stresses that these findings are based on self-reported reactions to hypothetical situations described in a survey. Actual purchase behavior when faced with choices at the point of purchase could be very different from those reported here.

6.1 Bulb Choice under EISA

Respondents split evenly between a lower wattage incandescent bulb and a 23 Watt screw-in CFL as the most common bulb choice to purchase instead of a 100 Watt incandescent bulb; each was mentioned by 33% of respondents (Table 6–1). Another 10% of respondents indicated they would choose a 72 Watt screw-in halogen or a 17 Watt screw-in LED.¹⁴ Only 4% of the sample would choose the least efficient option offered, a 150 Watt incandescent.

Table 6–1: Bulb Choice under EISA
(Base: All Respondents)

Bulb type	
<i>Sample size</i>	582
A lower wattage incandescent bulb	33%
A 23 Watt screw-in CFL bulb meant to replace a 100 Watt incandescent bulb	33
A 72 Watt screw-in halogen bulb meant to replace a 100 Watt incandescent bulb	10
A 17 Watt screw-in LED bulb meant to replace a 100 Watt incandescent bulb	10
A 150 Watt incandescent bulb	4
Don’t know/refused	11

¹⁴ At the time of writing, few, if any, LEDs were currently on the market that would replace a 100 Watt incandescent at the comparable lumens rating. However, we offered this choice as such bulbs were expected to enter the market in 2012.

All respondents, regardless of bulb choice under EISA, received a follow-up question asking their reasons for choosing the particular bulb they favored. A popular response across all bulbs was a preference for that bulb's particular light, color temperature, or brightness (mentioned by 68% of those choosing a 150 Watt incandescent, 34% of those choosing a lower wattage incandescent or 72 Watt halogen, 30% of those choosing a 17 Watt LED, and 13% of those choosing a 23 Watt CFL) (Table 6–2). Indeed, this was the most popular response for the lower wattage incandescent, the 150 Watt incandescent (only 23 respondents, but they appeared to be very loyal to incandescent bulbs), and the 72 Watt halogen. Alternatively, the most popular response for choosing the 17 Watt LED or 23 Watt CFL was that these bulbs used less energy or were more efficient (mentioned by 46% and 42% of those choosing the bulbs respectively). Familiarity with particular bulb types, fitting the necessary fixtures, the low price of bulbs, and lowering one's energy bills, were also popular choices across bulbs.

Table 6–2: Reasons for Bulb Choice under EISA

(Base: Respondents who said they would most likely use a lower wattage incandescent bulb)

Reasons (Multiple Response)	Lower wattage incandescent	23 Watt CFL	72 Watt Halogen	17 Watt LED	150 Watt Incandescent
<i>Sample size</i>	<i>191</i>	<i>190</i>	<i>58</i>	<i>56</i>	<i>23</i>
Prefer this light/color temperature/brightness	34%	13%	34%	30%	68%
Uses less energy/efficient	18%	42%	16%	46%	3%
Familiar with/already use this bulb	14%	16%	8%	15%	9%
Fit fixtures/recommended for fixture	10%	5%	7%	0%	0%
Low price/on sale	8%	10%	7%	5%	9%
Lower energy bills	8%	9%	5%	13%	0%
Warm up quicker	3%	<1%	2%	2%	9%
Don't like CFLs because of mercury	3%	1%	2%	5%	3%
Convenience/availability/easy to use	3%	6%	5%	0%	0%
Most similar to incandescent I used/use	2%	8%	17%	4%	0%
Exchanging incandescents to other bulbs as needed	2%	2%	0%	2%	0%
Lasts longer	1%	7%	6%	11%	9%
Good quality bulb/trustworthy	1%	1%	2%	0%	4%
Not as hot	1%	2%	2%	3%	0%
Because of EISA/following the market	1%	3%	0%	4%	0%
Don't like the government telling me what bulb to use	1%	0%	0%	2%	0%
Environmentally friendlier	<1%	2%	0%	2%	0%
Other	7%	3%	5%	4%	4%
Don't know/refused	5%	4%	7%	6%	4%

6.2 Stockpiling of Incandescents

Respondents also indicated their likelihood of buying and saving extra 100 Watt incandescent bulbs for use after they are no longer available in stores; a practice known as “stockpiling” or “hoarding.” The majority of respondents indicated that they would be very unlikely to do so (62%), although a smaller percentage indicated being very likely to do so (12%), somewhat likely to do so (11%), and somewhat unlikely to do so (14%) (Table 6–3). The average value on the four-point likelihood scale was 3.26. Comparing those who had been aware of EISA before the survey to those who first found out about EISA during the survey reveals statistically significant differences in the likelihood to stockpile. Specifically, those already familiar with the legislation are more likely to say they will stockpile bulbs (17%) than those who only found out about EISA during the survey (6%). This suggests that the PAs may want to develop materials targeted at those who are just learning about EISA—perhaps even explaining the legislation to customers—but promoting the most efficient lighting options as viable, even superior, options to incandescents.

Table 6–3: Likelihood of Buying and Saving Extra 100 Watt Incandescent Bulbs for Use After 2012

(Base: All Respondents)

Level of likelihood	Overall	Aware of EISA	Not Aware of EISA
<i>Sample size</i>	582	327	255
Mean	3.26	3.15	3.41 ^{*Ω}
1. Very likely	12%	17% [*]	6% ^{*Ω}
2. Somewhat likely	11	11	12
3. Somewhat unlikely	14	13	16
4. Very unlikely	62	59	65
Don't know/refused	1	0	1

* Significantly different from Overall at the 90% confidence level.

Ω Significantly different from ‘Aware of EISA’ at the 90% confidence level.

We also gauged potential stockpiling of incandescent bulbs by asking the number of 100 Watt incandescents purchased by respondents who had self-reported buying these bulbs in the past three months (see Section 4.1).¹⁵ Among 100 Watt purchasers, the average number of 100 Watt bulbs purchased was 12.9, and the median value (the number occurring at the midpoint of purchases) was six (Table 6–4). The greatest number of respondents (40%) who had purchased 100 Watt incandescent bulbs reported purchasing only one to five of them in the past three months, which coincides with the “four-pack” of incandescent bulbs. However, 61% of respondents buying 100 Watt incandescents reported buying six or more bulbs—and 15% bought more than 25 bulbs—pointing to possible stockpiling in anticipation of EISA. Expanding the analysis to all respondents—most of whom did not buy 100 Watt incandescents—places the findings in a broader context, indicating fairly low rates of stockpiling across the broader population. Only 8% of the entire sample purchased 100 Watt incandescents, with a mean purchase of just over one bulb per participant.

Table 6–4: Quantity of 100 Watt Incandescent Bulbs Purchased

(Base: Respondents who said they had bought 100 Watt incandescent bulbs in the past three months)

Number of bulbs purchased	100 Watt Incandescent Purchasers	All Respondents
<i>Sample size</i>	47	582
Mean	12.9 ^a	1.1
Median	6	0
Quantity purchased		
1-5	40%	3%
6-10	23	2
11-25	23	2
25+	15	1
Don't know/Refused	0	0

^a The total number of *weighted* bulbs purchased is 631, but multiplying 12.9 by the *unweighted* sample size of 47 yields a bulb count of 606. Use of the weighted sample size of 49 provides the correct answer, albeit with rounding error.

As expected, those respondents who had indicated they were likely to stockpile 100 Watt incandescents also self-reported purchasing more (549 bulbs) of those the bulbs than the respondents who said they would be unlikely to stockpile (82 bulbs) (Table 6–5).

Table 6–5: Total Number of 100 Watt Incandescent Bulb Purchased by Self-Reported Tendency to Stock Pile

(Base: Respondents who said they had bought 100 Watt incandescent bulbs in the past three months)

Stockpiling likelihood	Likely to stockpile	Unlikely to stockpile
<i>Sample size</i>	31	16
Total 100 Watt Incandescent purchased	549	82

¹⁵ The question does not directly measure whether incandescent purchases are in anticipation of EISA, but the onsite saturation study will inquire of respondents why they are storing any type of light bulb. It is our expectation that this line of questioning will provide an onsite-verified assessment of EISA-related stockpiling of incandescent bulbs.

7 CFL Price Awareness and Satisfaction

The non-incentivized price of CFLs has risen in the past year due to the scarcity of rare earth minerals, some of which are key components of CFLs.¹⁶ The survey asked respondents who are somewhat or very familiar with CFLs if they had noticed a price increase and, if so, whether the increase had prevented them from buying CFLs. The team also asked respondents who have used CFLs how satisfied they are with them. All respondents that have used CFLs were also asked to name things they like about CFLs and things they do not like about them. Users of dimmable CFLs were asked to provide an assessment of those types of bulbs as well.

7.1 CFL Price Awareness

The majority of respondents who were somewhat or very familiar with CFLs (41%) had not noticed whether the price of CFLs had changed from last year to this year (Table 7–1). Another 20% believed the price of CFLs was about the same across the time period. Of those remaining, more respondents thought prices were lower (17%) than higher (12%) this year compared to last. Interestingly, recent purchasers were more likely than others to say that the price of CFLs was *lower* than in the previous year. Thus, recent price increases in CFLs have been largely unnoticed by the respondents in the survey, perhaps because many of them obtained program-supported CFLs and were not directly exposed to the price increase brought on by the scarcity of rare earth minerals or because they had not purchased CFLs recently enough to notice the prices. Alternatively, consumers may be less sensitive to CFL prices than previously thought, but more direct market-based research that carefully tracks sales with changes in incentive levels would be needed to draw this conclusion with more confidence.

Table 7–1: CFL Price Compared to Previous Year
(Base: Respondents who were somewhat or very familiar with CFLs)

CFL price compared to previous year	Overall	Recently Purchased CFLs	Did not Recently Purchase CFLs
<i>Sample size</i>	432	158	274
No, haven't noticed	41%	32%*	45% ^Ω
About the same	20	22	19
Lower	17	29*	10* ^Ω
Higher	12	13	12
Don't know/Refused	10	4*	14 ^Ω

* Significantly different from Overall at the 90% confidence level.

^Ω Significantly different from 'Recently Purchased CFLs' at the 90% confidence level.

¹⁶ DiClerico, Daniel. 2011. "Shortage of rare earth metals results in higher CFL prices." *Consumer Reports*. September 16, 2011. Available at <http://news.consumerreports.org/appliances/2011/09/shortage-of-rare-earth-metals-stokes-controversy-around-cfls.html>.

After giving their estimation of CFL price compared to the previous year, the 53 respondents who indicated CFL prices had increased revealed whether the higher price prevented them from purchasing CFLs. The majority of respondents who had noticed an increase (61%) were not influenced by the higher price to avoid purchasing CFLs (Table 7–2). However, just over one-third (36%) did indicate that the higher price was enough to make them avoid CFLs.

Table 7–2: Whether Higher Price Prevented Recent CFL Purchases

(Base: Respondents who said they thought CFL price was higher than previous year)

Response	
<i>Sample size</i>	53
Yes	36%
No	61
Don't know/Refused	4

7.2 CFL Satisfaction

The survey included a question about CFL satisfaction that had also been asked in the 2009 and 2010 consumer surveys. The majority of respondents in 2011 (72%) indicated that they were somewhat to very satisfied with CFLs (Table 7–3). However, these responses reveal a decrease compared to 2009 and also to 2010, when the trend was first observed, in the percentage of respondents who were very satisfied with standard CFLs. In the current sample, more respondents said they were somewhat satisfied with standard CFLs than very satisfied; a shift from previous years, but more were also likely to indicate being somewhat or very dissatisfied with CFLs compared to 2009 and 2010. We will repeat this line of questioning in the second and third waves of the survey and explore reasons for such responses in more depth, such as inquiring whether respondents' opinions of CFLs have recently changed and why.

Table 7–3: Satisfaction with Standard CFLs

(Base: Respondents who said they had ever used a CFL on the interior or exterior of home)

Level of satisfaction	2009	2010	2011
<i>Sample size</i>	339	313	390
Very satisfied	55%	50%	34%
Somewhat satisfied	31	36	38
Neither satisfied nor dissatisfied	7	3	8
Somewhat dissatisfied	3	7	14
Very dissatisfied	2	3	6
Don't know/Refused	2	1	1

In prior years, the Team has typically asked a follow-up question regarding CFL satisfaction only to those respondents who voiced dissatisfaction with the bulbs. This year, we decided to ask all CFL users what they do and do not like about the products, thus providing a more complete picture of the range of opinions about CFLs. Table 7–4 summarizes the responses, reporting results overall, but also by levels of satisfaction. The most common reason for liking CFLs is that they save energy—named by 56% of satisfied respondents and 41% of dissatisfied respondents. Moreover, with the exception of the 27% of dissatisfied respondents who do not like anything about CFLs, both groups also tend to like the longer life of CFLs and that they save money. Respondents who are satisfied with CFLs also appreciate their quality and brightness.

Table 7–4: Reasons Respondents Like CFL Bulbs

(Base: Respondents who said they had ever used a CFL on the interior or exterior of home)

Reasons (Multiple Response)	Satisfied with CFLs ^a	Dissatisfied with CFLs ^b	Total
<i>Sample size</i>	280	107	390
Save energy	56%	41%	52%
Longer bulb life	30%	15%	26%
Save money on bills	19%	8%	16%
Do not like anything about them/negative impression	3%	27%	9%
Good quality	10%	2%	8%
Brighter/brightness	10%	2%	8%
Don't get hot	8%	1%	6%
Help environment	5%	5%	5%
Convenience/easy to install	4%	2%	3%
Type of light i.e. soft, clear	3%	1%	3%
Cheaper	3%	1%	2%
Color/color choices	2%	2%	2%
Durability	2%	0%	1%
They are versatile/many uses	1%	1%	1%
Resemble incandescents in shape	<1%	2%	1%
Other	2%	1%	2%
Don't know/nothing in particular/no preference/refused	4%	10%	6%

^a Indicated that they were “very satisfied” or “somewhat satisfied” with CFLs.

^b Indicated that they were “neither satisfied or dissatisfied,” “somewhat dissatisfied,” or “very dissatisfied” with CFLs.

Table 7–5 lists the things about CFLs that both satisfied and dissatisfied respondents do not like about CFLs. While it is not surprising that 38% of satisfied respondents answered that there was nothing they disliked about CFLs, 13% of dissatisfied respondents mentioned the same thing, mainly because “neutral” responses were included in this group. The most commonly disliked characteristic of CFLs is their slowness to brighten, mentioned by 23% of satisfied respondents and 39% of dissatisfied respondents. Both groups also mentioned mercury and disposal issues (11% of satisfied and 27% of dissatisfied) and poor light color (12% of satisfied and 16% of

dissatisfied). Although mentioned by more dissatisfied respondents than satisfied ones, other common concerns included the brightness and light output of the bulbs, their appearance, shorter than promised life, expense, and that they do not work in certain fixtures.

Table 7–5: Reasons Respondents Do Not Like CFLs

(Base: Respondents who said they had ever used a CFL on the interior or exterior of home)

Reasons (Multiple Response)	Satisfied with CFLs ^a	Dissatisfied with CFLs ^b	Total
<i>Sample size</i>	280	107	390
Nothing I don't like about them	38%	13%	31%
Slow to turn on/brighten	23%	39%	28%
Mercury/disposal issues	11%	27%	16%
Poor light color	12%	16%	13%
Not bright enough	6%	16%	9%
Poor light output	4%	19%	8%
Don't like the look of bulb	7%	8%	7%
Shorter bulb life than promised	4%	11%	6%
Price/expense	5%	8%	6%
Not suitable/don't fit certain fixtures	4%	3%	3%
Flicker	1%	3%	2%
Too bright	2%	0%	1%
Buzz	1%	1%	1%
Poor manufacturing	1%	3%	1%
Don't work with dimmer switch	0%	5%	1%
Don't like government forcing consumers to buy them	0%	1%	1%
Poor durability/break easily	1%	1%	1%
Not adaptable enough	1%	1%	1%
Do not work in the cold	1%	2%	1%
Other	2%	6%	3%
Don't know/Refused	2%	1%	2%

^a Indicated that they were “very satisfied” or “somewhat satisfied” with CFLs.

^b Indicated that they were “neither satisfied or dissatisfied,” “somewhat dissatisfied,” or “very dissatisfied” with CFLs.

Respondents who have used dimmable CFLs were also asked what they did not like about these products. As with standard CFLs, the most frequent response was that there is nothing respondents did not like about dimmable CFLs (45%) (Table 7–6). However, though not mentioned as frequently, concerns dimmable users cited included being slow to turn on/brighten (12%), and not dimming to low light levels or dimming as low as incandescents (8%).

Table 7–6: Dimmable CFL Features Respondents Do Not Like

(Base: Respondents who said they had ever used a CFL on the interior or exterior of home and were somewhat or very familiar with dimmable CFLs)

Reasons (Multiple Response)	
<i>Sample size</i>	<i>193</i>
Nothing I don't like about them	45%
Slow to turn on/brighten	12%
Do not dim to low light levels/Do not dim as low as incandescents	8%
I don't currently use them	7%
Need to replace switch/need compatible switch	5%
They don't work well unspecified	4%
Price/too expensive	4%
Poor light color	3%
Flicker	3%
They are hard to find	3%
Poor light output	2%
Not bright enough	2%
Shorter bulb life than promised	2%
Mercury/disposal issues	2%
Buzz	1%
Poor manufacturing	1%
Dislike everything about them	1%
Don't fit in my fixtures	1%
They aren't as efficient	1%
When dimmed with other CFLs, light level or brightness is not the same for all bulbs	<1%
Other	0%
Don't know/Refused	10%

8 Customer Demographics

The Team collected a standard battery of demographic and housing characteristics that help to assess the nature of the sample. As explained above, due to the use of customer lists in 2011 and random digit dial surveys of landlines (2009 and 2010) and cell phones (2010 only) in previous years meant that the Team used a different weighting scheme in 2011 than in 2009 and 2010. The different weighting schemes had little impact on the indicators of the lighting market (see [Appendix A](#)), but, because the 2009 and 2010 weighting schemes were based on demographic characteristics, use of a different scheme in 2011 did affect demographic findings. For this reason, in this section we present the *unweighted* demographic data across the three years. The results show that, once the weighting schemes are removed, the demographic characteristics of respondents across the three years did not vary much, despite the use of different sampling approaches. We also included questions about environmental and early adopter opinions to assess the nature of the sample and present them below.¹⁷

8.1 Housing Characteristics

The majority of respondents in all three years resided in single-family detached homes or single-family attached homes (78%) (Table 8–1). The percentage of single-family homes is higher than in Massachusetts in all three years.

Table 8–1: Type of Home
(Base: All Respondents)

Type of home	Massachusetts Census	2009	2010	2011
<i>Sample size</i>	2,520,419	503	381	582
Single-family detached house	52%	68%	65%	64%
Single-family attached house (townhouse, row house, or duplex)	5	15**	13	14
Apartment building with 2-4 units	21	6	9	10
Apartment building with 5 or more units	21	8	11	10
Mobile home or house trailer	1	1	1	<1
Other	0	1	1	1
Don't know/Refused	-	1	0	<1

* Total occupied housing units

** Duplexes counted with single-family attached in 2009, but with all two-to-four unit buildings in 2010, which is more in keeping with Census reporting.

¹⁷ The Team performed additional analyses on these questions but did not identify any clear or useful patterns between opinions about the environment or early adopter tendencies with key indicators of the lighting market. Therefore, we have not presented these results in this draft. However, we will continue to explore connections between these opinions and key lighting market indicators in future survey waves; over time, patterns may emerge.

Respondents living in houses also revealed the decade in which their home was built. There was a wide range of values on this question in 2011, with homes that were built before 1930 and others built after 2000. As in 2009 and 2010, the largest percentage of homes, however, fell at the earlier end of this spectrum, being built before 1930 (Table 8–2).

Table 8–2: Decade in Which Home was Built

(Base: Those living in single-family houses)

Decade	Massachusetts Census	2009	2010	2011
<i>Sample size</i>	2,520,419	409	296	458
1930s or earlier	35%	26%	31%	25%
1940s	6	7	4	5
1950s	12	13	14	13
1960s	11	9	10	13
1970s	12	11	10	11
1980s	11	13	13	11
1990s	8	12	7	9
2000 or later	7	6	9	9
Don't know/Refused	-	3	3	2

* Total occupied housing units

Just over one-fourth of respondents indicated being the owners of their homes in 2011, while the remaining 21% rented or leased (Table 8–3). These results are not that different from 2009, when we surveyed an even greater proportion of owners (82%), or from 2010 when the inclusion of a cell-phone sample contributed to a slightly larger sample of renters (24%).

Table 8–3: Ownership of Home

(Base: All Respondents)

Tenure	2009	2010	2011
<i>Sample size</i>	503	381	582
Own/Buying	82%	75%	78%
Rent/Lease	17	24	21
Occupied without payment or rent	0	<1	-
Other	0	0	<1
Don't know/Refused	1	<1	<1

*Total occupied housing units

The majority of homes surveyed in 2011 were less than 3,500 square feet (93%) in size (Table 8–4). The greatest single percentage of homes in 2011 fell in the size range of less than 1,400 square feet, which is similar to homes in the 2010 sample but more than those in the 2009 sample.

Table 8–4: Size of Home
(Base: All Respondents)

Square Feet	2009	2010	2011
<i>Sample size</i>	350	273	441
Less than 1,400	24%	34%	32%
1,400 – 1,999	28	25	29
2,000 – 2,499	19	19	17
2,500 – 3,499	16	14	15
3,500 – 3,999	3	5	4
4,000 – 4,999	3	2	2
5,000 or more	6	2	2
Don't know/Refused (sample size)	153	108	141

The numbers of rooms in respondents' homes are shown in Table 8–5. The most common number of rooms per home in 2011 was six (19%), which is consistent with the 2009 and 2010 samples. The 2011 sample also had more homes with 10 or more rooms, which is greater than in 2010 but equivalent to 2009.

Table 8–5: Rooms in Home
(Base: All Respondents)

Total Rooms	Massachusetts Census	2009	2010	2011
<i>Sample size</i>	2,520,419*	503	381	582
1	2%	<1%	3%	1%
2	3	1	2	2
3	10	4	8	7
4	15	7	9	11
5	18	14	14	14
6	18	24	20	19
7	13	17	15	14
8	10	11	12	11
9	12**	8	9	8
10 or more		12	7	12
Don't know/Refused	-	2	<1	1

*Total occupied housing units

** The ACS reports only 9 or more rooms.

8.2 Social Attributes

Respondents in 2011 tended to have a Bachelor's degree or higher (61%), which is higher than the 2009 and 2010 samples (Table 8–6).

Table 8–6: Highest Level of Education

(Base: All Respondents)

Degree Attained	2009	2010	2011
<i>Sample size</i>	503	582	582
Less than high school graduate	3%	3%	2%
High school graduate (Includes GED)	16	15	15
Some college or associates degree	20	25	21
Bachelors degree or higher	57	56	61
Don't know/refused	3	1	2

*Population 25 years and over

The 2011 respondents were less likely to live alone than were respondents in 2010, and this may reflect the use of a cell-phone sample in 2010 (Table 8–7). The most common household size among respondents in both 2010 and 2011 was two. This question was asked differently in 2009, so no comparable data are available for that year.

Table 8–7: Number of Persons Living the Home

(Base: All Respondents)

Number of household members	Massachusetts Census	2010	2011
<i>Sample size</i>	2,520,419*	381	582
1	29%	21%	17%
2	32	37	37
3	16	15	19
4	22**	16	15
5		7	7
6 or more		3	5
Don't know/refused	-	1	<1

* Total occupied housing units

** The ACS reports only 4-or-more person household

Respondents' household incomes are reported in Table 8–8. Although there was variation in income across the sample, 31% of respondents in 2011 reported earning over \$100,000 a year, which is somewhat higher than the state total or than either the 2009 (28%) or 2010 (28%) samples. Despite the use of a cell phone sample in 2010 to capture hard-to-reach customers, a greater percentage of households in 2009 reported making less than \$15,000 a year than in 2010 or 2011. However, it should be noted that 24% of 2009 respondents refused to provide their income, compared to about 12% in 2010 and 13% in 2011, which likely biases the description of household income.

Table 8–8: Household Income

(Base: All Respondents)

Household Income	Massachusetts Census	2009	2010	2011
<i>Sample size</i>	2,520,419*	370	314	485
Less than \$15,000	13%	15%	9%	6%
\$15,000 to less than \$20,000	5	5	7	5
\$20,000 to less than \$30,000	8	8	8	10
\$30,000 to less than \$40,000	8	8	10	9
\$40,000 to less than \$50,000	8	8	5	8
\$50,000 to less than \$75,000	17	14	16	16
\$75,000 to less than \$100,000	13	21	17	14
\$100,000 to less than \$150,000	16	14	19	18
\$150,000 or more	13	14	9	13
Don't know (sample size)	-	11	18	14
Refused (sample size)		122	49	81

*All households

The sample was fairly evenly split between genders, although slightly more than half of respondents were male (51%) (Table 8–9).

Table 8–9: Gender

(Base: All Respondents)

Gender	Massachusetts Census	2009	2010	2011
<i>Sample size</i>	6,547,629*	503	381	582
Female	52%	60%	55%	49%
Male	48	40	45	51

* The census no longer lists the gender of the householder for married-couple families, so this is based on the total population of the state.

8.3 Environmental and Early Adopter Opinions

Also included in the survey were items addressing respondents’ agreement with prevalent environmental and technological issues. First, respondents answered whether protection of the environment or economic growth should be given priority. The majority of respondents felt that protection of the environment should be prioritized (67%). Alternatively, 21% of respondents felt that economic growth was the more pressing issue (Table 8–10).

Table 8–10: Respondents’ Agreement with Two Statements about Environment and Economy
(Base: All Respondents)

Agree most with which statement	
<i>Sample size</i>	582
Protection of the environment should be given priority	67%
Economic growth should be given priority	21
Don’t know/Refused	12

Respondents also reported their levels of agreement with three statements about technology. When given the statement “I am skeptical of new technology. I like to wait until a new technology is proven before I buy it,” the majority of respondents voiced agreement or strong agreement (65%). Alternatively, most respondents (66%) disagreed or strongly disagreed with the statement “I always like to have the latest gadget.” The highest levels of agreement of all three statements, though, were evinced for the final sentiment, that “I am comfortable learning about how new technologies work,” in which 92% of respondents either agreed or strongly agreed (Table 8–11).

Table 8–11: Respondents’ Agreement with Statements about Technology
(Base: All Respondents)

Level of Agreement	I am skeptical of new technology. I like to wait until a new technology is proven before I buy it	I always like to have the latest gadget	I am comfortable learning about how new technologies work
<i>Sample size</i>	582	582	582
Strongly agree	16%	7%	39%
Agree	49	26	53
Disagree	26	50	6
Strongly Disagree	8	16	2
Don’t know/Refused	1	1	1

9 Conclusions

This report, together with the sensitivity analysis, represents one of the earliest deliverables for the 2011 through 2013 evaluation activities in support of the Residential Retail Products evaluation area. Although we typically refrain from making recommendations until more evaluation tasks have been completed, a few key conclusions and related recommendations seem warranted based on the research presented here.

Conclusion 1: First, the survey provides evidence that customer satisfaction with CFLs continues to decline, but the reasons for the decline remain unclear.

Recommendation 1a: The Team will continue to track satisfaction with CFLs in the next two waves of the survey to be completed in mid- and late-2012. We will continue to inquire what both satisfied and dissatisfied respondents like and do not like about CFLs in order to provide a more complete understanding of CFL satisfaction. We will also ask respondents if they have recently shifted their opinion about CFLs and why.

Recommendation 1b: The PAs have little direct control over the persistent concerns about CFLs. The fact that they contain mercury, cannot dim as well as other bulb types, emit a different quality of light, and take a while to warm up represents limitations of the technology. However, at least for dimmability, warm-up time, and light quality, some bulbs suffer from these problems more than others. The PAs may want to continue to work with the program partners to support the highest quality CFLs on the market, perhaps holding additional focus groups or doing other types of consumer research to identify which bulbs those might be.

Recommendation 1c: At this time, the LEDs on the market meant to replace 40 Watt and 60 Watt incandescents do not save much more energy than CFLs, but they do address at least some of the concerns with them, including concerns about mercury, dimmability, and warm-up time. Of course, they also cost more than CFLs. Therefore, in trying to increase adoption of LEDs, the PAs may want to consider educational materials that highlight these advantages of LEDs, but in a manner that does not add to the denigration of CFLs.

Conclusion 2: Respondents reported increased familiarity with all types of specialty bulbs, but the increase in familiarity was smallest for A-line, covered CFLs. These bulbs, however, closely resemble incandescents and can fit into some type of fixtures (*e.g.*, those in which the shade clips onto the bulb) that standard CFLs cannot.

Recommendation 2a: The PAs may consider increasing consumer education efforts regarding covered CFLs, as they are more difficult to distinguish from incandescents when simply looking at bulbs in the lighting aisle of the store. For example, signage at the point of purchase could note that the bulb is a CFL and that it can be used with a wider variety of fixtures.

Recommendation 2b: The PAs may also want to consider reclassifying this bulb from “specialty” to “covered standard”. Although the covered CFL is not the most common design, it does not have any “specialty” functions, such as being dimmable or fitting into a candelabra base. In fact, the covered CFL may offer the best opportunity to capture those customers who reject spirals for aesthetic or “fit in fixture” reasons. From an incentive and implementation perspective, the switch in classification may just be a matter of semantics, but from an evaluation and energy-savings perspective, the covered CFL is most accurately grouped with other A-line bulbs and not with specialty bulbs, because, at least in the short-term, covered CFLs will usually replace A-line incandescents—and perhaps spiral CFLs—and not specialty incandescents.

Conclusion 3: Users of dimmable CFLs generally tend to like them, but the most persistent complaint about them is that they do not dim consistently or as much as other types of light bulbs. Dimmable users also complain about warm-up time.

Recommendation 3: Satisfaction with the dimming capabilities of CFLs has been a persistent concern among consumers and many program administrators as well. Current indications are that screw-in LEDs dim more consistently and to a greater degree than dimmable CFLs. Therefore, the PAs may consider removing dimmable CFLs from the list of products they support, and turn instead to LEDs as their preferred dimmable technology.

Conclusion 4: The results presented here suggest that about one-fourth of respondents will consider stockpiling incandescent bulbs; in fact, evidence suggests that some of these respondents have already started to do so.

Recommendation 4: The PAs may want to consider placing a consumer education campaign that helps consumers make more informed bulb choices, rather than simply defaulting to the incandescent bulb with which they are most familiar. The best choice may not always be the most efficient one, but perhaps consumers who are considering stockpiling will learn that efficient bulb options to replace incandescents exist for nearly all of their lighting needs. Moreover, PA education on EISA and alternative bulb types may prevent consumers from first learning about EISA to choose efficient options over stockpiling or buying halogen bulbs.

Conclusion 5: While consumers are becoming more familiar with the term “lumens” and understand that it means light output or brightness, they still buy bulbs based on wattage or wattage equivalence. This behavior will likely continue until consumers become comfortable with recognizing that they need an 800 lumen bulb, for example, for one lighting need and a 1700 lumen bulb for another purpose.

Recommendation 5: The PAs may want to continue their efforts at helping consumers make the transition from thinking about Watts to thinking about lumens. Educational materials

and point-of-purchase displays that show typical uses based on lumens provide one example.

Appendix A Exploration of Comparability Over Time

This appendix presents additional analysis of some of the key lighting market indicators, particularly those that exhibited unexpected findings across 2009, 2010, and 2011. In particular, the tables presented below compare weighted and unweighted data on CFL awareness, familiarity, use, and satisfaction for 2009, 2010, and 2011, with further breakdowns in 2010 for cell phone and landline samples. In general, the weighted and unweighted data point to very similar results, with the percentage of respondents voicing opinions being extremely similar regardless of whether we employ the weighting scheme. This suggests that such opinions vary little by demographic characteristics, or the weighting scheme would have had more impact on the outcomes. The results also indicate that the 2010 cell phone sample does sometimes differ substantially from the 2010 landline sample and from 2009 and 2010; however, the size of cell phone sample was too small to have a great impact on the overall data reported for 2010. Taken together, these findings suggest that neither the weighting scheme nor the different sampling approaches can explain the unexpected findings that arise from comparing results across the three surveys. We discuss the results for individual topics below, before the relevant tables.

The weighting scheme appears to have had a somewhat greater impact on CFL awareness in 2009 than in 2010 and 2011, and the cell phone sample voiced slightly lower levels of awareness than the landline sample. However, the unweighted data make clear that the samples in all years and including the cell phone and landline sample differed very little in their reported awareness of CFLs.

Table A-1: CFL Awareness, Weighted and Unweighted

Awareness	2009	2010			2011
	Overall	Cell Phone	Landline	Overall	Overall
Weighted					
<i>Sample Size</i>	503	58	322	381	582
Yes	87%	90%	94%	94%	94%
No	13	10	6	6	7
Don't know/refused	0	0	0	0	0
Unweighted					
<i>Sample Size</i>	503	51	330	381	582
Yes	92%	92%	95%	94%	94%
No	8	8	6	6	6
Don't know/refused	0	0	0	0	0

A comparison of weighted and unweighted data demonstrates that the weighting does not greatly alter the percentage of respondents falling into each familiarity category. Moreover, both the cell phone and landline samples in 2010 reported greater levels of familiarity than in 2009, which also relied on an RDD approach, and 2011, when we used a customer list to identify respondents. Interestingly, the cell phone sample reported the highest levels of familiarity, but this had only a slight impact on the overall results for 2010.

Table A-2: CFL Familiarity, Weighted and Unweighted

Familiarity	2009	2010			2011
	Overall	Cell Phone	Landline	Overall	Overall
Weighted					
<i>Sample Size</i>	503	58	322	381	582
Very familiar	32%	45%	41%	42%	34%
Somewhat familiar	39	41	37	38	40
Not too familiar	11	5	10	9	16
Not at all familiar	5	0	6	5	4
Not aware of CFLs	13	10	6	6	6
Don't know/refused	1	0	0	0	<1
Unweighted					
<i>Sample Size</i>	503	51	330	381	582
Very familiar	35%	47%	42%	43%	33%
Somewhat familiar	40	41	40	40	41
Not too familiar	11	4	9	8	16
Not at all familiar	5	0	3	3	4
Not aware of CFLs	8	8	6	6	6
Don't know/refused	1	0	0	0	<1

The 2009 and 2010 weighing scheme, which included home ownership, clearly had an impact on self-reported use of CFLs. The weighted data points to lower levels of use than the unweighted data; this is because the weighting scheme discounts the answers of homeowners, who were more likely to report using CFLs than renters, pulling down the percentage of respondents who said they used CFLs in the weighted data. This trend was not evident in the 2011 data when the weighting scheme did not include home ownership status. Instead, the most important finding regarding 2011 is that the unweighted data, which are not adjusted by any weighting scheme, show a more pointed decrease in the percentage of respondents who say they have used CFLs. This result is perplexing, as reported CFL use had been increasing until 2011. Therefore, the Team will continue to explore this question and probe it in more depth in the second and third waves of the survey.

Table A-3: CFLs Ever Installed in Home, Weighted and Unweighted

Have Ever Used a CFL	2009	2010			2011
	Overall	Cell Phone	Landline	Overall	Overall
Weighted					
<i>Sample Size</i>	503	58	322	381	582
Yes	68%	76%	78%	78%	67%
No	12	15	10	11	19
Don't know/refused	1	0	1	<1	3
Not aware of/familiar with CFLs	19	10	12	11	10
Unweighted					
<i>Sample Size</i>	503	51	330	381	582
Yes	74%	78%	83%	82%	67%
No	11	14	8	9	19
Don't know/refused	1	0	<1	<1	4
Not aware of/familiar with CFLs	15	8	9	9	10

Perhaps the most troubling trend observed in 2011 is the level of decreased satisfaction with CFLs. The Team observed lower levels of satisfaction when comparing 2009 to 2010, and the 2011 results continue that trend. The analysis of weighted and unweighted data makes clear that the weighting scheme cannot explain the differences in reported satisfaction over time. Although satisfaction is slightly lower unweighted in the 2009 and 2010 cell phone samples, the trends point in the same direction—decreased satisfaction in CFLs when looking overall and at the landline sample. The one interesting finding, however, is that the cell phone sample voiced very high levels of satisfaction with CFLs, and this might not be expected from a group that is supposed to be more “hard to reach” than landline respondents. Thus, there is some evidence that the inclusion of a cell phone sample altered the results, but the alteration remained small enough to only nudge the overall satisfaction levels for 2010.

Table A-4: CFL Satisfaction, Weighted and Unweighted

Satisfaction	2009	2010			2011
	Overall	Cell Phone	Landline	Overall	Overall
Weighted					
<i>Sample Size</i>	339	44	252	296	390
Very satisfied	55%	71%	47%	50%	34%
Somewhat satisfied	31	25	38	36	38
Neither satisfied nor dissatisfied	7	2	3	3	8
Somewhat dissatisfied	3	3	8	7	14
Very dissatisfied	2	0	3	3	6
Don't know/refused	2	0	1	1	1
Unweighted					
<i>Sample Size</i>	367	40	273	313	390
Very satisfied	52%	68%	47%	50%	34%
Somewhat satisfied	35	28	38	36	37
Neither satisfied nor dissatisfied	6	3	3	3	9
Somewhat dissatisfied	4	3	8	8	13
Very dissatisfied	2	0	3	3	6
Don't know/refused	2	0	1	1	1

Appendix B Consumer Survey Questionnaire

Hello, my name is _____ and I am calling from Tetra Tech on behalf of (PA). We are conducting a survey about household lighting. I’m not selling anything. I just want to ask you some questions about lighting in your home.

May I please speak with [INSERT NAME ON THE ACCOUNT].

[IF ACCOUNT HOLDER ISN’T AVAILABLE, READ] Is there an adult over the age of 18 available who is responsible for purchasing the light bulbs for your household? [IF NOT AVAILABLE, TRY TO RESCHEDULE AND THEN TERMINATE]

[IF NECESSARY, OFFER THE CONTACT NAME FROM BELOW AS THE PERSON TO CONTACT WITH ANY QUESTIONS ABOUT THE VALIDITY OF THE RESEARCH.]

Philip Moffitt	Cape Light Compact	508-744-1279
Wendy Todd	National Grid (NGrid/Massachusetts Electric)	781-907-2232
Monica Kachru	NSTAR Electric	781-441-8059
Tony Fornuto	Western Massachusetts Electric Company (WMECO/Northeast Utilities)	413-787-9329
Lisa Glover	Unitil (Fitchburg Gas and Electric)	603-773-6483

AWARENESS OF ENERGY-SAVING LIGHT BULBS

S1. Before this call today, had you ever heard of **Compact fluorescent light bulbs or CFLs?**

- 1. Yes
- 2. No
- 96. DON’T KNOW
- 97. REFUSED

[ASK S2 IF S1 = 2, 96, 97 OTHERWISE, SKIP TO S3.]

S2. Compact fluorescent light bulbs – also known as CFLs – usually do not look like regular incandescent bulbs. The most common type of compact fluorescent bulb is made with a glass tube bent into a spiral, resembling soft-serve ice cream, and it fits in a regular light bulb socket. Thinking about it again, before today, had you heard of CFLs?

- 1. Yes
- 2. No
- 96. DON’T KNOW
- 97. REFUSED

[ASK S3 IF S1 =1 OR S2=1, OTHERWISE SKIP TO S4].

S3. How familiar are you with CFLs? Would you say that you are...?

1. Very familiar
2. Somewhat familiar
3. Not too familiar
4. Not at all familiar
96. DON'T KNOW
97. REFUSED

S4. Another type of light bulb that is used in homes is called an L-E-D, also known as a light emitting diode bulb. These bulbs have regular screw bases that fit into most sockets. They are not battery-operated LEDs, holiday lights, or decorative strands and do not need special attachments to work in regular sockets. How familiar are you with LED light bulbs [SAY THE LETTERS L-E-D] that screw into regular light sockets? Would you say that you are...?

1. Very familiar
2. Somewhat familiar
3. Not too familiar
4. Not at all familiar
96. DON'T KNOW
97. REFUSED

S5. Another type of light bulb is a halogen bulb. These bulbs have regular screw bases that fit into most sockets; they do not need special attachments to work in regular sockets. How familiar are you with halogen bulbs that screw into regular light sockets? Would you say that you are...?

1. Very familiar
2. Somewhat familiar
3. Not too familiar
4. Not at all familiar
96. DON'T KNOW
97. REFUSED

S6. [IF S5=1 OR 2 (Somewhat or Very Familiar) AND S3=1 OR 2; OTHERWISE SKIP TO S7] As far as you know, which type of bulb uses less energy to produce light— [RANDOMIZE AND READ: “compact fluorescent light bulbs” or “halogen bulbs”]—or do both bulbs use about the same amount of energy? **[USE SAME RANDOM ORDER PREVIOUSLY USED IN THE QUESTION; ACCEPT ONE RESPONSE.]**

1. COMPACT FLUORESCENT LIGHTBULBS USE LESS ENERGY
2. HALOGEN BULBS USE LESS ENERGY
3. BOTH BULBS USE ABOUT THE SAME AMOUNT OF ENERGY
96. DON'T KNOW
97. REFUSED

S7. **[ASK IF S3 = 1, 2, 3 and S1 = 1 or S2 = 1; OTHERWISE SKIP TO EISA1.]** While most CFLs are spiral shaped, CFLs also come in other shapes and some have special features. I'm going to read you a list of different types of CFLs. For each type, please tell me if you are very familiar, somewhat familiar, not too familiar, or not at all familiar with that type of CFL. [RANDOMIZE ORDER OF A THROUGH F]

[READ IF NECESSARY WITH EACH ITEM] Are you very familiar, somewhat familiar, not too familiar, or not at all familiar with this type of CFLs?

- a. Dimmable CFLs. This refers to a CFL that can be used with a dimmer switch to adjust the level of brightness
- b. 3-way CFLs. This refers to a CFL that has the ability to shine at 3 different levels of brightness in a 3-way lamp
- c. Flood or recessed lighting CFLs—shaped like a regular incandescent floodlight
- d. Candelabra CFLs. This refers to a CFL with a small base for use in a decorative fixture, such as a chandelier.
- e. Globe CFLs. This refers to a CFL that has a round shape and might be used in a fixture, such as a vanity light
- f. A-shaped CFLs. This refers to a covered CFL that is made to look and feel like a traditional incandescent or regular light bulb.

1. Very familiar
2. Somewhat familiar
3. Not too familiar
4. Not at all familiar
96. DON'T KNOW
97. REFUSED

S8. [IF S7a=1 or 2 (Very or Somewhat Familiar with dimmable CFLs); OTHERWISE SKIP TO EISA1] Do you currently use any dimmable CFLs in your home?

1. Yes
2. No
96. DON'T KNOW
97. REFUSED

EISA Awareness & Future Expectations

EISA1. A new federal law, the Energy Independence and Security Act of 2007, will restrict the sale of 100 Watt incandescents, or regular 100 Watt bulbs, manufactured after January 1, 2012. Had you heard about this new federal law before this call?

1. Yes
2. No
96. DON'T KNOW
97. REFUSED

EISA2. Do you currently use any 100 Watt incandescent light bulbs in your home?

1. Yes
2. No
96. DON'T KNOW
97. REFUSED

EISA3. [IF EISA2 = 2] Why don't you currently use any 100 Watt incandescent light bulbs in your home? [DO NOT READ RESPONSES; MULTIPLE RESPONSE]

1. (They are too bright)
2. (They use too much energy)
3. (My socket says only to use a certain Watt bulb/fixtures won't take such high wattage)
4. (Other [Specify: _____])
96. DON'T KNOW
97. REFUSED

EISA4. [IF EISA2 NE 1] Do you currently use ANY incandescent light bulbs, of any wattage, in your home?

1. Yes
2. No
96. DON'T KNOW
97. REFUSED

EISA5. [READ ONLY IF EISA2 NE 2] We are interested to know the type of bulb you would be likely to use instead of a 100-Watt incandescent bulb once this is no longer available for purchase. I'm going to name different types of bulbs that may be options and after I read the list, I'd like you to tell me which one you would be most likely to use instead of the 100-Watt incandescent bulb. [READ ONLY IF EISA2=2] We understand that you do not currently use any 100 Watt incandescent bulbs, but please tell me which of the following bulb types you would be most likely to use.

The options are [READ ENTIRE LIST BASED ON INSTRUCTIONS BELOW]. **THEN IMMEDIATELY ASK:** Which one of these bulbs would you be **most** likely to use [READ ONLY IF EISA2 NE 2] instead of the 100-Watt incandescent?

[PROGRAMMER: RANDOMIZE LIST. INCLUDE 2 IN LIST ABOVE AND IN THE ACCEPTABLE RESPONSES ONLY IF S5=1 OR 2; SIMILARLY, INCLUDE 3 ONLY IF S3=1 OR 2 and Answers Yes at S1 or S2, AND INCLUDE 4 ONLY IF S4=1 OR 2]

BULB TYPES
1. A lower wattage incandescent bulb
2. A 72 Watt screw-in halogen bulb meant to replace a 100 Watt bulb
3. A 23 Watt screw-in compact fluorescent bulb meant to replace a 100 Watt incandescent bulb
4. A 17 Watt screw-in LED [SAY THE LETTERS L-E-D] or light-emitting diode bulb meant to replace a 100 Watt incandescent bulb
5. A 150 Watt incandescent bulb
96. DON'T KNOW [ONLY ALLOW FOR ENTIRE QUESTION]
97. REFUSED [ONLY ALLOW FOR ENTIRE QUESTION]

EISA6. You said you would be most likely to instead use **[IF EISA5=1 SHOW: a lower wattage incandescent bulb]/[EISA5=2 SHOW: a 72 Watt screw-in halogen bulb]/[IF EISA5=3 SHOW: a 23 Watt screw-in compact fluorescent bulb]/[IF EISA5=4 SHOW: a 17 Watt screw-in LED bulb]/[IF EISA5=5 SHOW: a 150 Watt incandescent bulb)].** Why that bulb?

1. **[RECORD VERBATIM]**
96. DON'T KNOW
97. REFUSED

EISA7. How likely are you to buy extra 100 Watt incandescent light bulbs before 2012 and save them for use after the federal law goes into effect? Would you say you are . . . **[READ LIST]. [RECORD ONE ANSWER]:**

1. Very likely
2. Somewhat likely
3. Somewhat unlikely, or
4. Very unlikely to buy and save 100 Watt incandescent light bulbs for use after 2012?
96. DON'T KNOW
97. REFUSED

[ASK CFL USE AND SATISFATION IF S3 = 1, 2, 3 and S1 = 1 or S2 = 1, OTHERWISE SKIP TO AT1 Alternative Lighting Technologies Section.]

CFL USE AND SATISFACTION

USE1. Have you EVER used a compact fluorescent light bulb, or CFL, on the interior or exterior of your home?

1. Yes
2. No
96. DON'T KNOW
97. REFUSED

[IF USE1= 2, 96, 97, GO TO INTRO PRECEDING AT1 Alternative Lighting Technologies Section]

USE2. Do you CURRENTLY have CFLs installed on the interior or exterior of your home?

1. Yes
2. No
96. DON'T KNOW
97. REFUSED

USE3. How satisfied are you with the compact fluorescent light bulbs currently in your home or, if you have no CFLs installed right now, the ones you have used in the past? Would you say you are....?

1. Very satisfied
2. Somewhat satisfied
3. Neither satisfied nor dissatisfied
4. Somewhat dissatisfied
5. Very dissatisfied
96. DON'T KNOW
97. REFUSED

USE4. In your experience, what do you like about compact fluorescent light bulbs? [DO NOT READ; SELECT ALL THAT APPLY]:

1. (Save energy)
2. (Save money on bills)
3. (Good quality)
4. (Help environment)
5. (Longer bulb life)
6. (Other [SPECIFY])
7. (Do not like anything about them)
96. (DON'T KNOW)
97. (REFUSED)

USE5. [IF S7a=1 or 2 (Somewhat or Very Familiar with Dimmable CFLs); OTHERWISE SKIP TO USE6] Previously you said that you are familiar with dimmable CFLs. Is there anything that you do NOT like about dimmable CFLs? [DO NOT READ; SELECT ALL THAT APPLY]

1. (Do not dim to low light levels/Do not dim as low as incandescents)
2. (When dimmed with other CFLs, light LEVEL/BRIGHTNESS is not the same for all bulbs)
3. (When dimmed with other CFLs, light COLOR is not the same for all bulbs)
4. (Poor light color)
5. (Poor light output)
6. (Not bright enough)
7. (Too bright)
8. (Slow to turn on/brighten)
9. (Flicker)
10. (Buzz)
11. (Poor manufacturing (unspecified))
12. (Shorter bulb life than promised)
13. (Mercury/disposal issues)
14. (Other [SPECIFY])
15. (Nothing I don't like about them)
96. (DON'T KNOW)
97. (REFUSED)

USE6. Is there anything that you do NOT like about [IF USE5, SAY: 'Other types of'] compact fluorescent light bulbs? [DO NOT READ; SELECT ALL THAT APPLY]

1. (Poor light color)
2. (Poor light output)
3. (Not bright enough)
4. (Too bright)
5. (Slow to turn on/brighten)
6. (Flicker)
7. (Buzz)
8. (Poor manufacturing (unspecified))
9. (Shorter bulb life than promised)
10. (Mercury/disposal issues)
11. (Other [SPECIFY])
12. (Nothing I don't like about them)
96. (DON'T KNOW)
97. (REFUSED)

ALTERNATIVE LIGHTING TECHNOLOGIES

[ASK AT1 IF S4= 1, 2, OR 3]

[SKIP TO RECENT LIGHTING PURCHASES Section IF S4= 4, 96, 97]

I'd like to ask you a few questions about your use of other types of light bulbs.

AT1. Are you currently using L-E-D screw in bulbs in your home—the kind that screw into regular light fixtures?

1. Yes
2. No
96. DON'T KNOW
97. REFUSED

AT2. [IF AT1=1] In what types of fixtures do you have screw-in L-E-D bulbs installed in your home? Again these are only the LEDs that screw into regular light sockets. [DO NOT READ. ALLOW MULTIPLE RESPONSES]

1. (Recessed can)
2. (Ceiling flush mount)
3. (Chandeliers)
4. (Pendants/Hanging)
5. (Ceiling fans with lighting)
6. (Track lighting)
7. (Wall mounted)
8. (Vanity)
9. (Floor/Table/Portable lamps)
10. (Outdoor [various])
11. (Other) [SPECIFY]
- 96 (Don't know)
- 97 (Refused)

RECENT LIGHTING PURCHASES

Now I have a few questions about how you **usually** buy light bulbs.

BUY1. [IF EISA2=2 OR EISA4=2, READ “Previously you told us that you don’t currently use (IF EISA2 = 2 = “100 Watt”) incandescent bulbs, but...Have you looked for 100 Watt incandescent bulbs, or regular 100 Watt bulbs, at any retailers in the past three months, even if you did not buy any?

1. Yes [**CONTINUE**]
2. No [**GO TO 0**]
96. DON’T KNOW [**GO TO 0**]
97. REFUSED [**GO TO 0**]

BUY2. [IF BUY1 = 1 YES] In the past three months, when you looked for 100 Watt incandescent bulbs, did you find any on the shelves?

(IF NEEDED, PROBE: “”In the past 3 months, have you been to any store to shop for 100 Watt incandescent bulbs, but could not find any on the shelves”?)

1. Yes—went to a store and found them on the shelves (SKIP TO BUY5)
2. No—went to a store and could NOT find them on the shelves
96. DON’T KNOW
97. REFUSED

BUY3.[IF BUY2=2] After not finding 100 Watt incandescents at that store, did you go look for them at another store, or on the internet?

1. Yes, went to another store
2. Yes, went to look on the internet
3. Yes, both stores and internet
4. No, did not go to another store or look on the internet (SKIP TO BUY8)
96. DON'T KNOW
97. REFUSED

BUY4.[IF BUY3 = 1, 2, OR 3] Were you able to find 100 Watt incandescent bulbs at those stores or on the internet in the past three months?

1. Yes, in stores
2. Yes, on internet
3. Yes, both stores and internet
4. No
96. DON'T KNOW
97. REFUSED

BUY5.[IF BUY4= 1, 2, OR 3 OR BUY2 = 1] Have you purchased any 100 Watt incandescent bulbs in the past three months?

1. Yes [CONTINUE]
2. No [GO TO 0]
96. DON'T KNOW [GO TO 0]
97. REFUSED [GO TO BUY8]

BUY6.[IF BUY5 = 1 YES] How many 100 Watt incandescent bulbs have you purchased in the past three months? [RECORD ACTUAL RESPONSE; IF DON'T KNOW PROBE FOR BEST GUESS; USE 997 FOR 997 OR MORE, 998 FOR REFUSED, AND 999 FOR DON'T KNOW.]

BUY7. Have you purchased any light bulbs instead of 100 Watt incandescents in the past three months?

- | | |
|---|-------------------|
| 1 | Yes |
| 2 | No (SKIP TO BUY8) |
| D | Don't know |
| R | Refused |

BUY7A-E. [IF BUY4 = 4 NO or BUY5 = 2] What type of bulbs did you buy instead of 100 Watt incandescents? [RANDOMIZE RESPONSES 1-4 THEN 5; MULTIPLE RESPONSE].

A. Incandescent bulbs of another wattage [ASK FOLLOW-UP QUESTION IMMEDIATELY]

1A.[FOLLOW-UP QUESTION]: What wattage bulbs did you buy instead of the 100 Watt incandescent bulbs? [RECORD]

B. Compact fluorescent bulbs or CFLs

C. LED bulbs

D. Halogen bulbs

E. Another kind of light bulb [SPECIFY _____]

1 Yes

2 No

D Don't know

R Refused

BUY8. (IF ANSWERED "YES" TO ANY IN BUY7, SKIP TO BUY8A). Now I'd like to ask you about your purchases of other types of lightbulbs.

Have you purchased any light bulbs in the past three months?

1 Yes

2 No (SKIP TO BUY9)

D Don't know

R Refused

BUY8. Have you purchased any of the following types of light bulbs in the past three months?
[RANDOMIZE AND READ 1-7 THEN 8; MULTIPLE RESPONSE].

- A. [SKIP IF 0 = 2 CFLs and S2 = 2,D,R or if Not Familiar at S3(=3 or 4)] Compact fluorescent lamps or CFLs that screw into regular light sockets
- B. [SKIP IF 0 = 3 LEDs or if Not Familiar at S4 (=3 or 4)] L-E-Ds that screw into regular light sockets
- C. [SKIP IF 0 = 4 Halogen or if Not Familiar at S5 (=3 or 4)] Halogen bulbs that screw into regular light sockets
- D. [SKIP IF BUY5= 1] Incandescent or regular light bulbs
- E. Pin-based fluorescent tubes that can only be used in fluorescent light fixtures
- F. Pin-based CFLs that can only be used in special light fixtures
- G. Pin-based L-E-Ds that can only be used in special light fixtures
- H. OTHER [SPECIFY]_____

- 1 Yes
- 2 No (SKIP TO BUY9)
- D Don't know
- R Refused

BUY9. What information do you look for on BULB packaging to help you decide which bulb to purchase? **[DO NOT READ. RECORD VERBATIM ANY RESPONSES THAT DO NOT FIT PRECODES. ACCEPT MULTIPLE RESPONSES.]**

- 01 (PRICE)
- 02 (LIGHTING FACTS/ENERGY FACTS LABEL)
- 03 (WATTAGE)
- 04 (WATT EQUIVALENCY)
- 05 (ENERGY STAR LABEL)
- 06 (UL, OR UNDERWRITERS LABORATORIES LABEL)
- 07 (LUMENS)
- 08 (CRI, OR COLOR RENDITION INDEX)
- 09 (BULB LIFE)
- 10 (DIMMING)
- 11 (3-WAY)
- 12 (SHAPE)
- 13 (MERCURY CONTENT)
- 14 (COLOR APPEARANCE)
- 95 (OTHER) **[SPECIFY]**
- 96 DON'T KNOW
- 97 REFUSED

BUY10. I'm going to read a list of types of information you might look for on bulb packaging. You may have already mentioned this, but for each item I read, please tell me whether or not you have looked for it. **[READ LIST]. [DO NOT SHOW ITEMS 01-13 RECORDED IN BUY9. [RANDOMIZE A-M, THEN READ N. RECORD AS YES/NO FOR EACH. ACCEPT MULTIPLE RESPONSES.]**

- A. Price?
- B. Lighting Facts Label?
- C. Wattage?
- D. Watt equivalency?
- E. The ENERGY STAR label?
- F. The UL, or Underwriters Laboratories Label?
- G. Lumens?
- H. CRI, or color rendition index?
- I. Bulb life?
- J. Dimming?
- K. 3-Way ability?
- L. Certain bulb shape?
- M. Mercury content?
- N. Color appearance?
- O. Anything else I didn't already mention?**[SPECIFY]**

- 1. Yes
- 2. No
- 96. DON'T KNOW
- 97. REFUSED

BUY11.(SKIP IF S2 = 2, D, R) Have you noticed the price of CFLs at retailers being higher, lower, or about the same this year compared to last year?

- 1. Higher
- 2. Lower
- 3. About the same
- 4. No, haven't noticed
- 96. DON'T KNOW
- 97. REFUSED

BUY12.[IF 0=1 (Higher CFL price); OTHERWISE SKIP TO P1] Did the higher price prevent you from purchasing any CFLs that you considered buying recently?

1. Yes
2. No
96. DON'T KNOW
97. REFUSED

Lumens & Key Lighting Knowledge

P1. Before today, have you seen or heard of the word “lumens” used in relation to lighting?

1. YES
2. NO [SKIP TO P3]
- 96 DON'T KNOW [SKIP TO P3]
- 97 REFUSED [SKIP TOP3]

P2. What does the word “lumens” mean to you? **[DO NOT READ. FILL IN CLOSEST ANSWER CATEGORY OR RECORD VERBATIM. MULTIPLE ANSWERS ALLOWED. IF RESPONDENT SAYS ‘LIGHT QUALITY’, PROBE FOR EXACTLY WHAT ‘QUALITY’ THEY MEAN]**

1. (LIGHT OUTPUT OR BRIGHTNESS)
2. (LIGHT COLOR)
3. (THE SAME AS WATTS)
- 95 (OTHER)[RECORD VERBATIM]
- 96 DON'T KNOW
- 97 REFUSED

P3. Have you seen or heard the terms “warm white” and “cool white”- as in the color white - used in relation to lighting?

1. YES
2. NO [SKIP TO SECTION E]
- 96 DON'T KNOW [SKIP TO SECTION E]
- 97 REFUSED [SKIP TO SECTION E]

P4. What do the terms “warm white” and “cool white” - as in the color white -mean to you? **[RECORD VERBATIM. MULTIPLE ANSWERS ALLOWED. IF RESPONDENT SAYS ‘LIGHT QUALITY’, PROBE FOR EXACTLY WHAT ‘QUALITY’ THEY MEAN]**

- 01 [RECORD VERBATIM]
- 96 REFUSED

97 DON'T KNOW

ENVIRONMENTAL, EARLY ADOPTER, REASONS FOR USE

- E1. Which one of these two statements about the environment and the economy do you most agree with—[RANDOMIZE AND READ]
1. Protection of the environment should be given priority, even at the risk of limiting economic growth OR
 2. Economic growth should be given priority, even if the environment suffers to some extent
96. DON'T KNOW
97. REFUSED
- E2. Please tell me if you strongly agree, agree, disagree, or strongly disagree with each of the following statements. [RANDOMIZE AND READ]
- 1 Strongly agree
 - 2 Agree
 - 3 Disagree
 - 4 Strongly Disagree
- 96 DON'T KNOW
97 REFUSED
- a. I am skeptical of new technology. I like to wait until a new technology is proven before I buy it.
 - b. I always like to have the latest gadget.
 - c. I am comfortable learning about how new technologies work.

CONSUMER ELECTRONICS

Now I have a few questions about some of the consumer electronics that you may currently have at home.

CE1. Before this call, had you ever heard of Smart Power Strips, or Advanced Power Strips?

1. Yes [CONTINUE]
2. No [GO TO CE4]
96. DON'T KNOW [GO TO CE4]
97. REFUSED [GO TO CE4]

CE2. [IF 1=1] Where have you heard or seen information about Smart Power Strips or Advanced Power Strips? [DO NOT READ RESPONSES; MULTIPLE RESPONSES]

1. [MAILING FROM ELECTRIC COMPANY]
2. [DISPLAY AT A MALL OR A STORE]
3. [ADS FROM STORES]
4. [SAW ON STORE SHELVES]
5. [MAGAZINE OR NEWSPAPER]
6. [OTHER—SPECIFY: _____]
96. DON'T KNOW
97. REFUSED

CE3. [IF CE1=1] How would you describe what a Smart Power Strip or Advanced Power Strip does? [RECORD EXACT WORDS; MULTIPLE RESPONSES]

96. DON'T KNOW
97. REFUSED

CE4. (IF CE1 = 1: Just so we're on the same page...) A Smart Power Strip, or Advanced Power Strip, has one "master" plug that controls the power for other plugs. For example, when you turn your TV off, you can have your entire home theater turn off too—your DVD player or VCR and game consoles will all turn off. Now that you have heard the description, [IF CE1 = 1 SAY "is this what you understand to be a Smart Power Strip or Advanced Power Strip?" OTHERWISE SAY, "would you say you had heard of Smart Power Strips or Advanced Power Strips before this call?"]

1. Yes
2. No
96. DON'T KNOW
97. REFUSED

CE5. [IF CE4=1 (Yes, heard of Smart Power Strip)] Do you have any Smart Power Strips or Advanced Power Strips currently installed in your home?

1. Yes
2. No
96. DON'T KNOW
97. REFUSED

CE6. Are you aware of any SmartPhone or iPhone programs or applications that are associated with monitoring energy usage in the home?

1. Yes [CONTINUE]
2. No [GO TO CE8]
96. DON'T KNOW [GO TO CE8]
97. REFUSED [GO TO CE8]

CE7. Have you ever used any of these SmartPhone or iPhone programs or applications for monitoring energy usage?

1. YES
2. NO
96. DON'T KNOW
97. REFUSED

CE8. Are you aware of any SmartPhone or iPhone programs or applications that help with finding energy-efficient products?

1. YES [CONTINUE]
2. NO [GO TO DEM1]
3. 96. DON'T KNOW [GO TO DEM1]
4. 97. REFUSED [GO TO DEM1]

CE9. Have you ever used any of these SmartPhone or iPhone programs or applications for finding energy-efficient products?

1. YES
2. NO
96. DON'T KNOW
97. REFUSED

CUSTOMER DEMOGRAPHICS

Now I have a few questions for statistical purposes only.

DEM1. What type of home do you live in? Is it a . . . ?

1. Single-family detached house
2. Single-family attached house (townhouse, row house, or duplex)
3. Apartment building with 2-4 units
4. Apartment building with 5 or more units
5. Mobile home or house trailer
6. Other (Specify): _____
96. DON'T KNOW
97. REFUSED

[ASK DEM2 IF DEM1 = 1, 2. OTHERWISE, SKIP TO DEM3.]

DEM2. When was your home built? Please stop me when I get to the appropriate category.

1. 1930s or earlier
2. 1940s
3. 1950s
4. 1960s
5. 1970s
6. 1980s
7. 1990s
8. 2000 or later
96. DON'T KNOW
97. REFUSED

DEM3. Do you or members of your household own this home or do you rent?

1. Own/Buying
2. Rent/Lease
3. Occupied without Payment or Rent
4. OTHER (SPECIFY): _____
96. DON'T KNOW
97. REFUSED

DEM4. Approximately how large is your home? [READ LIST IF NECESSARY]

1. Less than 1,400 square feet
2. 1,400 – less than 2000 square feet
3. 2,000 – less than 2500 square feet
4. 2,500 – less than 3500 square feet
5. 3,500 – less than 4000 square feet
6. 4,000 – less than 5000 square feet
7. 5,000 square feet or more
96. DON'T KNOW
97. REFUSED

DEM5. How many rooms are in your home, not counting bathrooms?

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10 or more
96. DON'T KNOW
97. REFUSED

DEM6. What is the highest level of education that the head of household has completed so far?

[READ CATEGORIES, IF NECESSARY.]

1. Less than Ninth Grade
2. Ninth to Twelfth Grade, No Diploma
3. High School Graduate (includes GED)
4. Some College, No Degree
5. Associated Degree
6. Bachelors Degree
7. Graduate or Professional Degree
96. DON'T KNOW
97. REFUSED

DEM7. Counting yourself, how many people normally live in this household on a full time basis?
Please include everyone who lives in your home whether or not they are related to you and exclude anyone who is just visiting or children who may be away at college or in the military.

- RECORD NUMBER OF PEOPLE _____
- 96. DON'T KNOW
 - 97. REFUSED

DEM8. Do you pay your electric bill directly to your electric company, or is your electricity included in your rent or condo fee?

- 1. Pay Directly to Electric Company
- 2. Electricity Included in Rent or Condo Fee
- 3. Paid for in Some Other Way
- 96. DON'T KNOW
- 97. REFUSED

DEM9. Which category best describes your total household income in 2010 before taxes? Please stop me when I get to the appropriate category.

- 1. Less than \$15,000
- 2. \$15,000 to less than \$20,000
- 3. \$20,000 to less than \$30,000
- 4. \$30,000 to less than \$40,000
- 5. \$40,000 to less than \$50,000
- 6. \$50,000 to less than \$75,000
- 7. \$75,000 to less than \$100,000
- 8. \$100,000 to less than \$150,000
- 9. \$150,000 or more
- 96. DON'T KNOW
- 97. REFUSED

DEM10. [INTERVIEWER: DO NOT READ.]

Sex:

- 1. Female
- 2. Male

RECRUIT FOR ONSITE SURVEY

R1. On behalf of (PA), we are offering households in your area \$150 to allow a trained technician to visit their home to gather more detailed information about the lighting and consumer electronics products used. The visit should take about less than 2 hours. BY SAYING YES, YOU ARE SIMPLY AGREEING TO BE RE-CONTACTED TO SET UP AN APPOINTMENT IF YOU ARE FOUND TO BE ELIGIBLE FOR THE FOLLOW UP STUDY. I WANT TO EMPHASIZE, DURING THE VISIT, THERE WILL BE NO ATTEMPT TO SELL YOU ANYTHING. The information gathered will be used to evaluate and improve energy efficiency programs.

Would you be interested in being a part of this type of visit?

- 1. Yes [CONTINUE TO R2]
- 2. No [THANK AND TERMINATE]
- 3. (Don't know/Refused)

[IF R1=3] That's OK, you do not have to decide now. Would it be OK if I take your name and have someone call you when we are scheduling these visits?

- 1. Yes[CONTINUE TO R2]
- 2. No [THANK AND TERMINATE]








R2. [IF YES] Just to confirm, what is your name? [RECORD]_____

R3. [IF YES] What is your address, city, state, and zip?
[RECORD]_____

R4. [IF YES] And what is the best number to call you about a visit?
[RECORD]_____

Thank you very much. As I said, we will be scheduling these visits in the next few weeks and will call you then.

CFL REFERENCE (source: http://www.energystar.gov/index.cfm?c=cfls.pr_cfls_shapes):

Bulb Image	Type of Bulb
	Spirals
	A-shaped bulbs: Made to look and feel like traditional incandescents.
	Globe: This refers to a CFL that has a round shape and might be used in a fixture, such as a vanity light.
	Tubed
	Candelabra: Small bulbs for use in decorative fixtures where you can see the light bulb. Often used in chandeliers
	Posts, Capsules, Barrels: Covered post bulbs for outdoor fixtures; there are also yellow "bug light" covered posts, designed to keep away insects.
	Indoor Reflectors: Provide directional light; recessed ceiling lights or ceiling fans.