

A Tale of Two CFL Markets: An Untapped Channel and the Revitalization of an Existing One

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ABSTRACT

Given the obstacles facing the compact fluorescent lamp (CFL) market, including declining net-to-gross ratios and the impact of federal regulations on baseline savings, efficient lighting programs are in a tight spot. Years of highly cost-effective CFL savings are waning and efficiency program administrators are trying to figure out the options to achieve meaningful savings in a mature market. Facing these challenges, Efficiency Vermont developed two fresh approaches that remove market barriers to consumer participation in the residential retail market. These approaches resulted in a surge of participation in the specialty CFL category and in the low-income sector.

After years of surpassing its savings goals, Efficiency Vermont faced declining CFL participation, despite an average socket saturation of only 23% (Nexus 2009). In response, it crafted two approaches. The first was a unique specialty CFL program and marketing campaign, which revitalized the CFL market with a 36% increase in participation in 2010 and a participation increase of approximately 70% in 2011, compared to 2009. These results broke previous records and exceeded the program's goals; the increased participation in the specialty CFL target market has expanded awareness to unexpectedly high levels in the entire CFL category.

The second approach involved collaboration with the Vermont Foodbank. In two years, 355,000 specialty and standard CFLs have been distributed throughout 280 Vermont Foodbank partner agencies. The program eliminated cost barriers and used established networks to reach those most in need.

Using fresh approaches, Efficiency Vermont has intervened in new market segments and removed tough market barriers.

Efficiency Vermont Lighting Program History

Offered by many of Vermont's electric utilities, instant lighting coupons for ENERGY STAR[®] compact fluorescent light bulbs (CFLs) began to be adopted by ratepayers in the late 1980s, before the state's energy efficiency utility, Efficiency Vermont, was even established. In 2000, Efficiency Vermont took over the coupon promotions, and shifted the promotion delivery mechanism to a system of year-round midstream buydowns in 2005. This shift allowed for some control over the incentivized price as Negotiated Cooperative Agreements allowed for some retail price modification. Efficiency Vermont's collaboration on retailer promotions enabled it to assure that the products met quality and cost-effectiveness criteria, including ENERGY STAR qualification and test thresholds determined by the utility-sponsored ENERGY STAR watchdog Program for Evaluation and Analysis of Residential Lighting (PEARL), administered by the Lighting Research Center of the Rensselaer Polytechnic Institute.

In 2008, Efficiency Vermont launched its first multimedia CFL awareness campaign, marketing its messages in the context of energy and cost savings, long life, and mercury

recycling requirements. This campaign was delivered through television advertising, a coordinated statewide newspaper advertising effort, and a website dedicated to CFLs and the campaign. In addition to the marketing campaign, communities were given direct attention through a geo-targeting effort. In 2008, Efficiency Vermont’s Efficient Products Program broke all previous records with these promotions and campaign. Participation rates continued into early 2009, but began to drop steeply thereafter, placing in jeopardy the efficiency program’s ability to meet its performance goals. Although the national economic downturn was a factor, the end of the marketing campaign at the end of 2008 also contributed to a clear inability to meet 2009 lighting goals.

Challenges to CFL Program Participation

In 2008, the ENERGY STAR CFL lighting promotions reached the highest participation rates in Efficiency Vermont’s history, but 2009’s precipitous decline in participation became a significant concern. The primary reasons for the decline seemed to be: (1) the budget-driven pause in the statewide multimedia CFL campaign, (2) the conclusion (an onset of an evaluation phase) of geographically targeted CFL events, and (3) the national economic slow-down.

In addition to these factors, Efficiency Vermont was acutely aware of an additional challenge from the State’s regulators: Savings attributable to standard CFLs were on a scheduled course of decline in the 2009-2011 contract period. This decline (see **Table 1**) was a function of markets continuing to mature and free-ridership increasing as programs had increasingly less effect on consumer choice in the marketplace (Vermont Energy Investment Corporation 2012). This decline in participation and in net-to-gross ratios, despite a relatively low socket saturation of approximately 23%, led Efficiency Vermont to design a program that would reach more customers and increase participation dramatically in 2010.

Table 1. Standard CFL Average Annual MWh Savings per Unit, by Year

Year	MWh Savings
2009	0.0328
2010	0.0284
2011	0.0220

Another opportunity for improving the standard spiral CFL program lay in the inconsistent value of incentives, and therefore relative retail prices. All of these observations of market trends informed Efficiency Vermont’s response to 2009’s alarming 40% decrease in overall participation, with two new programs designed to change participation trends. The first was an across-the-board price point for specialty CFLs. The second was an expansion into new retail channels.

First Approach: \$0.99 Specialty CFL Campaign

Confusing and inconsistent price points for CFLs were a problem that could be solved with a simple, straightforward, and easy-to-understand approach. With the understanding that consumers are price sensitive, especially regarding unknown technology, price became the focus for increasing participation. The reasoning was that if the price could be easy to understand and hard to resist, then customers would begin to engage with CFL technology again. In addition, if the price for one type of specialty bulb could be the same as that for another specialty bulb, then

the focus would shift away from pricing to what bulbs a customer needed.¹ The price was set at \$0.99 for all ENERGY STAR specialty CFLs at participating retailers. Given the relative saturation in Vermont, specialty bulbs seemed to have the most market opportunity.²

A successful earlier CFL campaign focused in part on messages regarding energy savings, the range of CFL styles, and CFL applicability. The 2011 campaign was focused primarily on CFL price (\$0.99 per lamp) and the limited nature of the offer (“while supplies last”). This marketing effort used television, radio, and community print advertising (see **Figure 1**). It also used a comprehensive digital campaign and retail signage to spread the word. Cooperative advertising was also developed as a tool to assist retailers encouraging local advertisements; Efficiency Vermont shares the cost of an advertisement when the ad includes the logo and campaign messaging.

Figure 1. Sample Marketing Message of CFLs during 2010 Buydown Program



Finally, Efficiency Vermont invested a lot of effort in increasing the number of retail partners via new channels such as grocery stores, drugstores, convenience stores, and independent Vermont retailers. Previous channels had been largely restricted to home improvement and hardware stores.

¹ The authors define a specialty CFL as a lamp “for general illumination that use(s) fluorescent light emitting technology and an integrated electronic ballast with or without a standard Edison screw-base and over a color temperature of 2700-3000 K; they can be dimmable, designed for special applications, have special color enhancement properties or have screw-bases that are not standard Edison bases, and include A-lamps, candelabras, G-lamps (globe), reflectors, torpedoes, dimmables, and 3-way bulbs.”

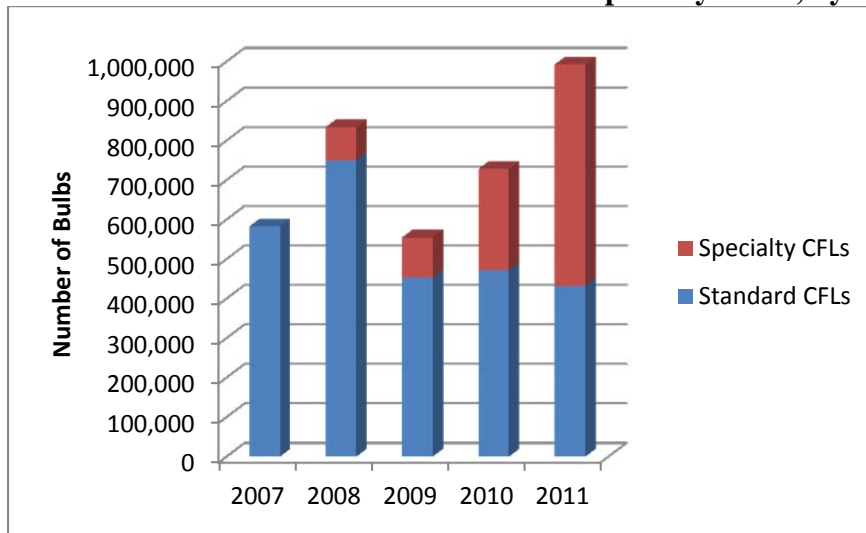
² A 23% CFL socket penetration rate could suggest that the market is not saturated; however, most consumers tend to switch to CFLs bulb by bulb, indicating that the least-used sockets in their living spaces are the last to have CFL installations. The opportunity for specialty CFLs was, by contrast, wide open, especially considering the likelihood that consumers could be re-introduced to CFL technology with new types of products in this campaign.

\$0.99 Specialty CFL Campaign Results

This bold approach proved to be so successful that it turned around a declining participation rate and revitalized the CFL market with a 31% increase in total CFL sales in 2010, and a 79% increase in 2011 sales, compared to 2009.

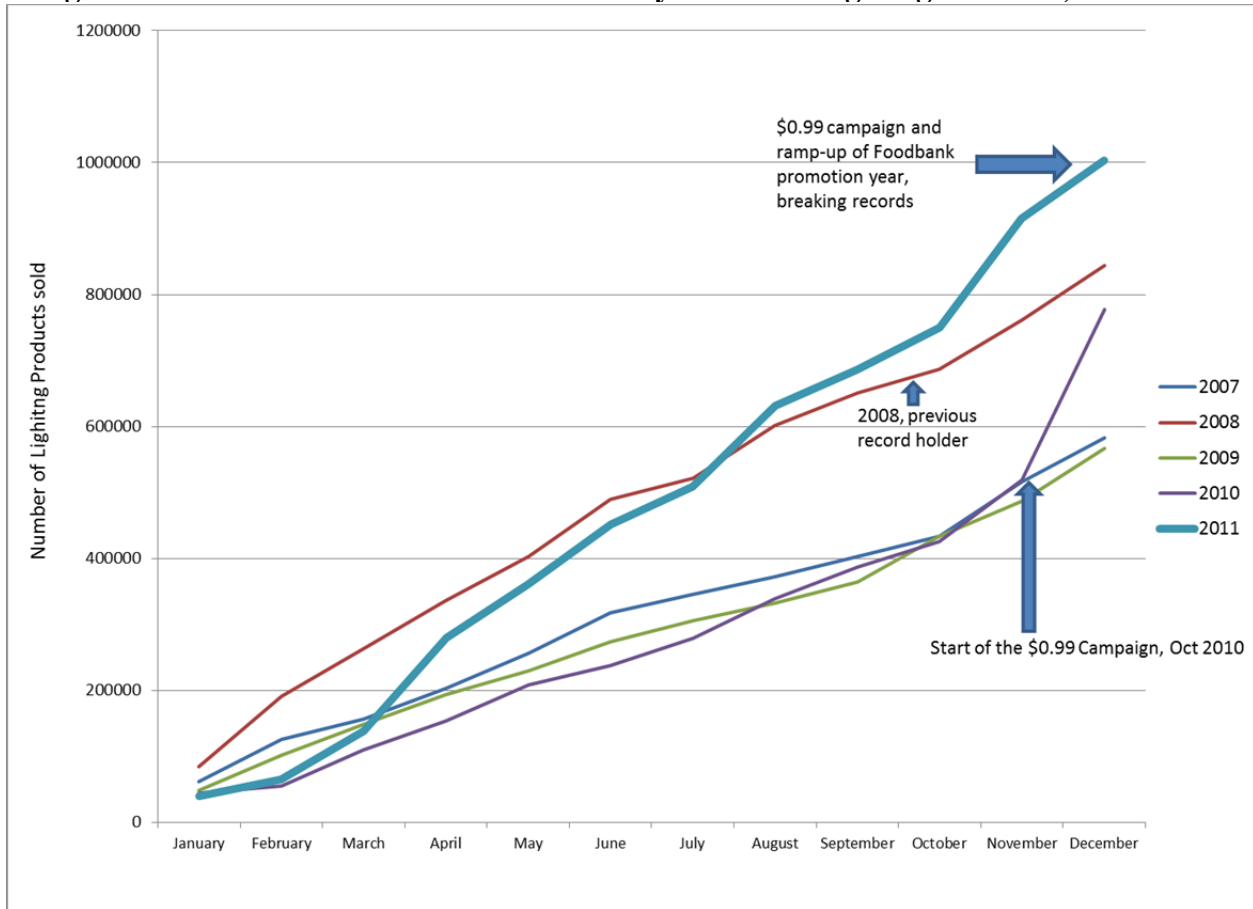
Since the \$0.99 Specialty CFL Campaign's introduction in late 2010, participation has increased steadily. In the previous record-breaking year of 2008, Efficiency Vermont provided incentives for 834,566 CFLs; participation slipped to 555,009 in 2009. After the implementation in 2010 of the \$0.99 Specialty CFL Campaign, participation in that specific product category rose to 257,009, for total CFL participation of 728,633. But 2011 tells a bigger story. In 2011, CFL in-store sales rose to 559,652 specialty CFLs (surpassing the sales of standard CFLs for the first time), with a total participation of 993,139 CFLs. This scope of this participation broke all previous records. **Figure 2** illustrates the trend.

Figure 2. In-store Sales of Standard CFLs and Specialty CFLs, by Year



In 2011, specialty CFL sales more than doubled compared to 2010. These results occurred in a CFL marketplace that has had aggressive and innovative programs in place for more than ten years. See **Figure 3**.

Figure 3. Cumulative Annual In-store Sales by Month of Lighting Products, 2007- 2011



The success of this new promotion stems from the removal of two market barriers: (1) cost, and (2) awareness and understanding of the product.

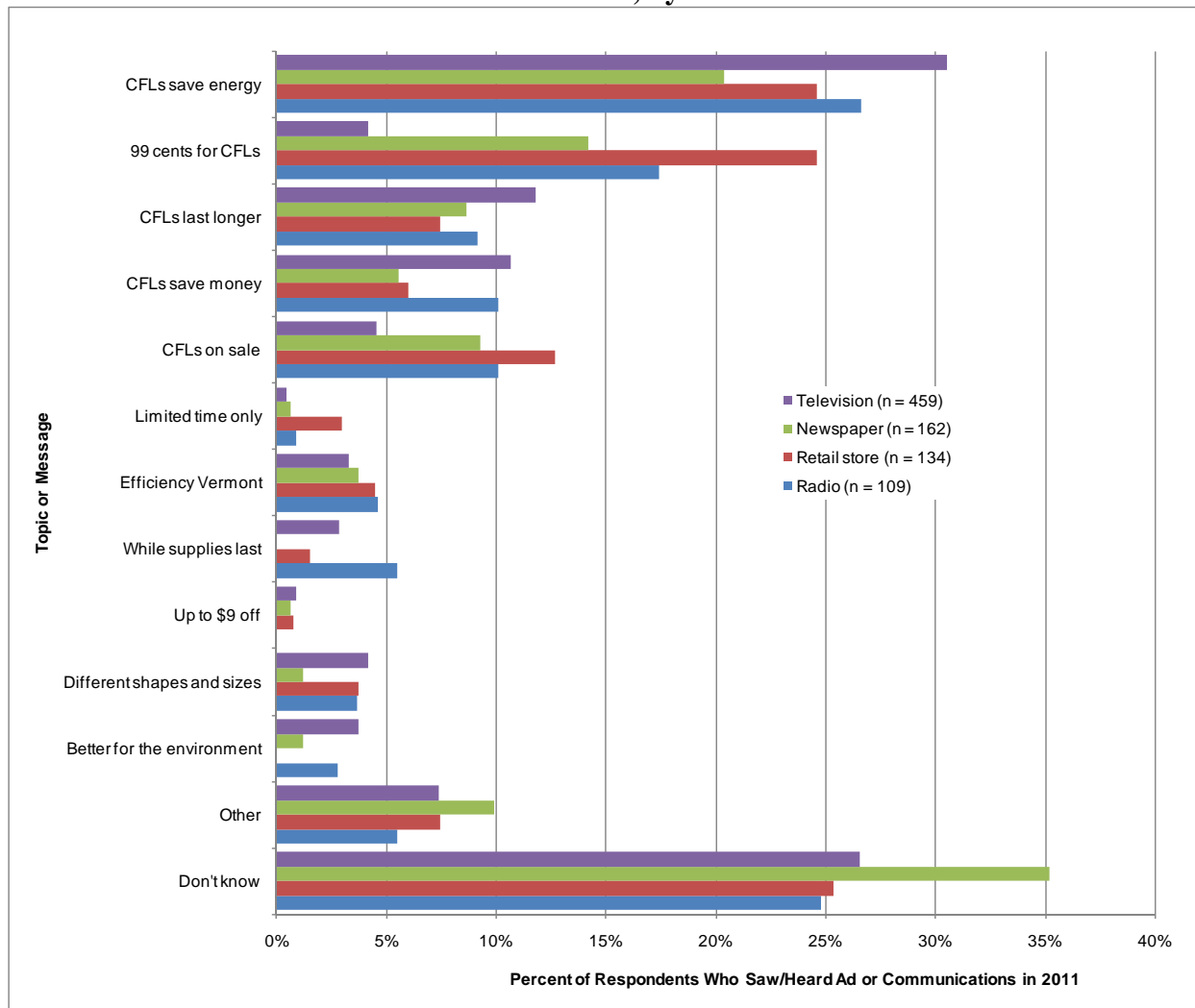
The \$0.99 price eliminated customer hesitation, because it removed the incrementally higher cost as a factor in decision-making. In fact, specialty CFLs in the promotion were sometimes less than the cost of their incandescent counterparts. Further, the \$0.99 price point was the same for all available ENERGY STAR specialty bulb types: reflectors, globes, and 3-way bulbs. With the cost barrier removed, the easily identifiable 99-cent price became a recognizable icon of the entire promotion.

The second market barrier, customer awareness and understanding, was addressed with a simple, straightforward marketing message that was a corollary to the price message: There is a CFL for every socket. The message contained additional information that helped make consumers aware of average annual savings when purchasing the CFL as well as the basic savings that occurred by installing a CFL. With that approach, efficient lighting suddenly became more understandable and easier for customers to decide to switch to these products. With the marketing campaign focused on a single price as an icon for all the sockets in the home, customers instantly recognized the CFLs on retail shelves. The approach also eliminated customer confusion about two other major competing technologies on the shelves: incandescent / halogen and light-emitting diodes (LEDs). Although even more efficient, the significantly higher price of LEDs in 2011 made it a technology attractive to non-mainstream consumers, who were not within the market group Efficiency Vermont was trying to reach with the 99-cent campaign.

The only remaining choice for the mainstream customer was to determine what types of sockets to fill. For a category that consumers do not want to spend a lot of time thinking about, the choice was made simple.

In a recent evaluation on the campaign’s impact, 70% of utility ratepayer survey respondents confirmed that they had seen or heard advertising or communications about CFLs (KEMA 2012). For a lighting category to receive that level of recognition in today’s marketing world, where people are constantly exposed to images and messaging, is significant. The campaign was delivered through different media. Fifty-three percent of survey respondents reported that they saw advertisements on television in 2011; 19% saw the ads in newspapers. Efficiency Vermont also tested the retention of the CFL campaign message: As shown in **Figure 4**, respondents who saw CFL advertisements or marketing pieces in retail stores mentioned either the discounted price (“99 cents for CFLs”) or “CFLs save energy.”

Figure 4. Marketing Message Recall among Respondents Who Saw or Heard CFL Advertisements in 2011, by Media Source*

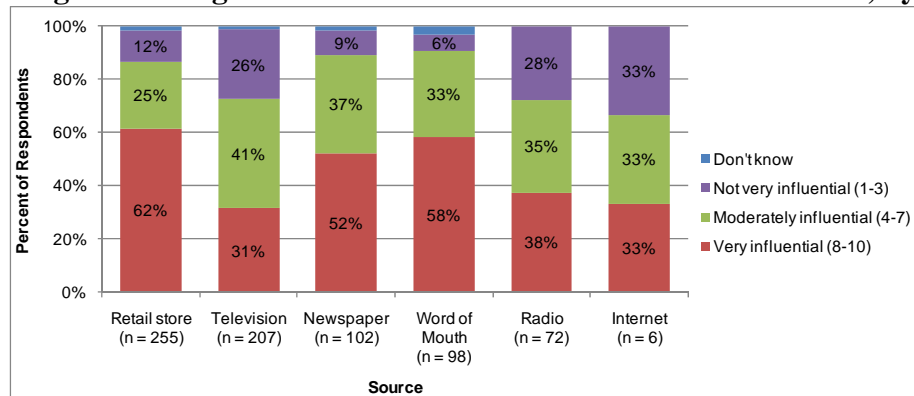


* Question allowed multiple responses; total responses might exceed 100% per ad source

Source: KEMA 2012

Survey respondents were also asked whether different types of marketing approaches had more or less influence on whether they purchased a CFL in 2011. **Figure 5** shows the order of influence: Retail stores, word-of-mouth, and newspapers had the greatest influence, with over 50% in each case being “very influential” in the decision to buy a CFL (KEMA 2012). These three marketing approaches, when you combine both “very influential” and “moderately influential,” influenced 87% or more customers to buy a CFL.

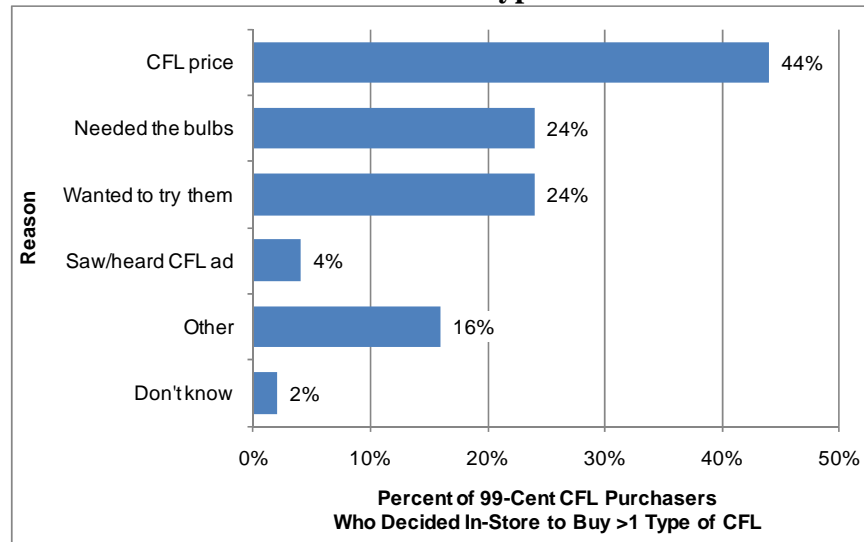
Figure 5. Level of Influence of Advertisement Sources among Respondents Who Purchased CFLs after Seeing or Hearing Advertisements about CFL Promotion in 2011, by Source



Source: KEMA 2012

As customers recognized and responded to the \$0.99 Specialty CFL Campaign, they also took an additional action. They reported that they unexpectedly purchased bulbs that they had not planned to buy when they got to the retail shelf. Of the 2011 \$0.99 CFL purchasers, 52% reported that they did not originally intend to buy more than one type of bulb, but they decided to buy more types while in the store. Among this subset, the respondents were asked what influenced their decision to buy more CFLs. The majority said CFL price, as shown in **Figure 6** (KEMA 2012).

Figure 6. Reasons for Deciding to Purchase Additional CFL Types, Among Consumers Who Purchased \$0.99 CFLs and Who Decided In-Store to Purchase More than One CFL Type



* Question allowed multiple responses (n=160); total responses might exceed 100% per ad source.
Source: KEMA 2012

Additionally, respondents who had *not* purchased CFLs cited, in order of importance, the following reasons: they had no need to, or if they did have a need, they were waiting for bulbs to burn out; someone else buys the bulbs; or CFLs are too expensive. All of these reasons could be addressed with a continuation of the campaign or by tailoring messaging to taking immediate action to replace bulbs. These barriers are not as hard to overcome as some of the perceived barriers of adopting CFLs that programs have faced in the past such as mercury content.

Second Approach: Targeting the Low-Income Population via Food Banks

In 1983, after a 350% rise in the need for emergency food assistance, Vermont convened a task force to address the need, particularly in the context of the disparate food shelves and pantries operating separately throughout the state reliant on local donations and efforts. The task force focused on education, volunteers, and community gardens, but paid special attention to the food shelves, specifically trucking, distribution, and warehousing. The conclusion of this task force, which evolved into the Governor’s Task Force on Hunger, was that something monumental had to change. It was a big risk but the solution appeared to be that resources needed to be managed on a state level. Thus in 1986, the Vermont Foodbank opened its doors.

In a recent study conducted by the U.S. Department of Agriculture (USDA 2011), more than 88,000 Vermonters, approximately 14% of the population, were found to be “food insecure.” Of those, 27,000 are children under the age of 18. In fact, in 2011, food shelves and meal sites around the state have reported a 35% to 40% increase in requests for emergency food, showing more and more people are finding it harder to make ends meet.

Last year, the Vermont Foodbank distributed more than 8 million pounds of food to 86,000 Vermonters. Food from grocery stores, Vermont farms and producers, manufacturers, restaurants, bakeries, colleges, food drives, gardens, and individuals is collected, sorted, and

distributed to a network of 280 food shelves, meal sites, shelters, senior centers, and after-school programs each day.

New Program Design – Vermont Foodbank Promotions

Partnership with the Vermont Foodbank was not new to Efficiency Vermont. In 2009, Efficiency Vermont recognized that getting CFLs into Foodbank customers' homes would not only save energy for this population, but also increase the amount of household money available for use on other necessities, while increasing the socket saturation of CFLs. A 2005 pilot with a few individual food shelves distributed CFLs via coupons. But conflicts arose around agency requirements for client identification to verify savings due to the fact that the food shelves require that their clients' identities remain confidential. This conflict halted the pilot.

With the decline in 2009 participation in the Efficiency Vermont CFL Lighting Program, and the sharp downturn in the economy (and the corresponding rise in the need for food assistance), Efficiency Vermont and the Vermont Foodbank teamed up to begin a new program. Due to the fact that Efficiency Vermont's Efficient Products promotions had moved upstream to buydown and markdown offerings, this opportunity and collaboration could be revisited and clients' identities would stay confidential.

Efficiency Vermont signed a Memorandum of Understanding (MOU) with the Vermont Foodbank and a manufacturing partner. Although Efficiency Vermont typically supports local retailers in all of its CFL promotions, this channel was excluded from this initiative. This decision kept the cost of the CFLs as low as possible because bulbs are shipped directly, so that benefits to the Vermont Foodbank could be maximized. Further, Vermont Foodbank customers were not likely to shop at the retail venues where Efficiency Vermont typically has CFL promotions in place; this initiative would not result in a loss of business for Efficiency Vermont's existing retail partner stores. A Request for Proposals (RFP) was issued to manufacturers to ensure bids on the delivery of low-cost, high-quality CFLs. Efficiency Vermont incentives would cover the remaining cost allowing the Vermont Foodbank to receive bulbs at no cost. Of five bidders, Greenlite was selected and has continued to provide a wide range of standard and specialty CFLs for three years through the Vermont Foodbank's unique promotion.

The Vermont Foodbank operates in a similar fashion to a grocery chain store. Two warehouses and / or distribution centers send out food and other necessities to the 280 partner agencies (food shelves and pantries, meal sites, group homes, etc.). The food shelves and pantries are set up like a small retail store, with the clientele using shopping baskets and carts to select their items. Many of these food shelves have limits on the quantity of any individual item that can be taken, and they all advise the clientele to take only what they need and can use. The CFL bulbs in Efficiency Vermont's promotion are effectively just another item on the shelf, see **Figure 7**.

Figure 7. Photograph of Typical Foodshelf



Were CFLs distributed through the Foodbank promotion "retail" CFLs or "free" CFLs, from the standpoint of efficiency program administration? Free CFLs are not an encouraged investment, because they can have a low in-service rate. Efficiency Vermont used the rationale that the Vermont Foodbank clientele have already paid a high social price if they qualify for services provided by hunger relief agencies. The quadrennial Hunger Study and other data that the Vermont Foodbank tracks indicate that only low-income residents visit food shelves, and are in need of assistance in obtaining the basic necessities. For this reason Efficiency Vermont decided that the CFLs distributed through the Vermont Foodbank promotion are considered retail CFLs.

Vermont Foodbank Program Results

Since 2009, the Vermont Foodbank CFL program has proven to be an unexpected success, certainly in terms of distribution and that distribution rate's corresponding energy savings. The promotion started with a modest 21,359 CFLs in 2009; in 2011, it had grown to 255,253 CFLs, as **Table 2** indicates.

Table 2. Vermont Foodbank Bulb Distribution, 2009 – 2011

Foodbank Number of Bulbs 2009 - 2011 (Incremental Annual)			
	2009	2010	2011
Standard CFLs	14,355	4,739	
Specialty CFLs	7,004	43,045	255,253
Total	21,359	47,784	255,253

The types of ENERGY STAR-qualified CFLs varied throughout the three years of the promotion. Starting with standard spirals, the promotions have moved to covered A-lines, indoor

reflectors, globes, 3-ways, and outdoor wet-rated reflectors, with varying wattage. This year, Efficiency Vermont even included advanced power strips and later, LED desk lamps for a going-back-to-school promotion. In 2011, Greenlite adeptly managed and shipped batches of bulb types in eleven different shipments throughout the year with bulbs rarely staying very long at the Vermont Foodbank warehouse.

The promotion reaches throughout the state by leveraging the Vermont Foodbank's established infrastructure and high distribution efficiency. The Vermont Foodbank's central warehouses mean that product can be moved efficiently to the 280 partner food shelves and pantries across the state. It can also identify and move products to locations where the demand is greatest or the need is highest. That is, the Vermont Foodbank knows its clients and partners better than anyone else and having them manage and match the products to the needs efficiently and effectively allows the program to be successful. The program has also yielded media attention (television interviews, radio interviews, newspaper pieces, and magazine articles). In the news coverage shown in **Figure 8**, staff are handing out CFLs and advanced power strips to a man who will bring the products to house-bound low-income seniors.

Figure 8. The Barre-Montpelier Times Argus Newspaper Photograph from Vermont Foodbank Special Event

A BRIGHT IDEA



Lara Bonn, retail efficient products program manager for Efficiency Vermont, and John Sayles, CEO of the Vermont Foodbank, deliver compact fluorescent light bulbs and advanced power strips to a Vermont Foodbank client during a Commodity Supplemental Food Program pickup at the Barre Auditorium on Thursday. Distributed with boxes of food, the energy-saving devices help food bank clients save money on their energy bills. The advanced power strips are a new item, but the food bank has already distributed more than 220,000 energy-efficient light bulbs.

Source: The Barre-Montpelier Times Argus October 21, 2011

An added benefit from this program design is increased cost-effectiveness. With its unique MOU model, Efficiency Vermont has been able to keep the cost of the CFLs as low as possible. Because the manufacturer can ship directly to the Vermont Foodbank, the program effectively removes the middle agency, retailer, or distributor from the cost base. Couple the direct shipments with the low cost ENERGY STAR CFLs, and the incentive-based cost-

effectiveness is lower than most other programs at \$46 / MWh. Currently, Efficiency Vermont uses the retail CFL energy saving measure characterizations but is developing a Hard-to-Reach measure characterization that truly represents the savings potential of CFLs in this market channel.

Access to the Vermont Foodbank's network provides Efficiency Vermont the ability to help more Vermonters become more energy efficient, saving energy and saving money. If an average CFL saves a low-income client \$42 over the life of the bulb, extrapolated to the Vermont average of 44 sockets per home, the potential long-term savings are substantial. This is money that Foodbank clients can put toward other essentials.

Conclusion

Years of cost-effective, easy CFL savings seemed to be ending. Faced with challenges, Efficiency Vermont attempted two fresh approaches that resulted not only in a surge in participation and savings continuing for over a year and counting, but also in the ability to help Vermonters in need of assistance, an especially important customer base because of its size and because low-income customers can save scarce funds by paying less for electricity through efficient bulbs.

The \$0.99 Specialty CFL Campaign successfully increased participation, and broke all previous levels of participation. The marketing efforts effectively engaged customers in many ways: Customers recalled the main messages, they retained those messages, and they were influenced significantly enough by the messages to take action. In addition, a compelling number of customers who were originally going to purchase one type of CFL were moved to buy other types because of the promotion.

It is important to note that socket saturation increased from 23% to 38% as a result of these two programs.³ This rate, although significant, still means that much opportunity exists for Efficiency Vermont to continue to engage customers in meaningful and identifiable ways.

One of those ways is the continued collaboration with the Vermont Foodbank. This partnership affords Efficiency Vermont not only the ability to provide energy efficient technology to clients so that they can save money, but also, the ability to help Vermonters in need.

Using both approaches, Efficiency Vermont has intervened in new market segments and removed what had been tough market barriers relating to price and perceived need. Not only have these approaches given Efficiency Vermont a fresh look at Vermont's socket saturation capabilities but also given us the chance to help an underserved market of low-income customers gain energy efficiency savings and save money at home.

References

KEMA. 2012. Evaluation of Efficiency Vermont 2011 CFL Campaign. Oakland, Calif.: KEMA Inc.

Nexus Market Research. 2009. Overall Report for Existing Homes in Vermont. Cambridge, Mass.: Nexus Market Research.

³ Calculation using Nexus Market Research evaluation and annual participation numbers.

The Barre-Montpelier Times Argus. October 21, 2011. Photograph by Jeb Wallace-Brodeur. Barre, Vt: The Barre-Montpelier Times Argus.

Vermont Energy Investment Corporation. 2012. Efficiency Vermont's Technical Reference User Manual (TRM), TRM User Manual No. 2012-75. Burlington, Vt.: Vermont Energy Investment Corporation.

[USDA] United States Department of Agriculture. 2011. Household Food Security in the United States in 2010. Washington, D.C.: USDA, Food Assistance & Nutrition Research Program.