

Bright Ideas in Residential Lighting

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Central Maine Power Company (CMP) began its efforts in the residential lighting market in 1988 when the Lions Clubs of Maine sold energy-efficient halogen light bulbs door-to-door as part of their annual fund raising activities. The same distribution system was employed in 1989 when the Lions sold 15 watt compact fluorescent light bulbs.

Building on its experience with the two previous Lions programs, CMP designed a lighting coupon program intended to encourage the development of a retail market for energy efficient compact fluorescent lighting products within CMP's service territory. CMP distributed point-of-purchase coupons to all residential customers, through their monthly electric bills, redeemable on the purchase of compact fluorescent lighting products at three major retail chains in the Company's service territory. Participating retailers purchased the lamps through their vendors and determined the retail price of the product. The program was promoted by the utility using various forms of media. Over 170,000 bulbs were sold during the fourth quarter of 1991. The evaluation of this program, to be completed during the summer of 1992, will estimate the energy impacts and cost-effectiveness of CMP's coupon program and will serve as the basis for reporting data on the product delivery system, market acceptance, and customer satisfaction.

During the fall of 1991, United Illuminating (UI) also ran a residential lighting coupon program. Although the lighting programs at CMP and UI were similar in intent and scope they differed in their administration and implementation. A mail-in coupon strategy reduces customer costs to \$8.00 to \$15.00 per bulb by providing \$7.00 to \$9.00 rebates. The program is designed to promote the full range of compact fluorescent products on a continuous basis, and to complement and support direct installation programs for residential lighting. Over 3,300 bulbs were sold during the fourth quarter of 1991. A comparison of CMP's and UI's programs provides insight to the effectiveness and success of residential lighting programs in the retail market place.

Introduction

Both Central Maine Power Company (CMP) and United Illuminating (UI) implemented residential lighting programs during the fall of 1991 with the goal of opening the retail market to energy-efficient lighting technologies. These programs offered rebates on compact fluorescent lighting products purchased at major retail outlets within each utility's respective service territory. CMP used a point-of-purchase coupon redeemable on the purchase of compact fluorescent lighting products while UI offered a mail-in rebate on the purchase of the energy efficient bulbs. The move to the retail market required long-term planning by each utility. These utilities began their efforts with programs, carefully designed and implemented, to introduce new lighting technologies to their customers before proceeding to the retail market place.

CMP's Operation Lightswitch[®]

In 1988, Central Maine Power Company (CMP) introduced an energy management program targeted at the residential lighting end-use thus, embarking on a campaign to move its residential customers toward energy efficiency in lighting. Initial efforts began with the first ever Lions Lightbulb promotion which saw a charitable organization selling energy efficient halogen light bulbs to utility customers as part of its fund raising efforts. Lions Club members sold six-packs of halogen bulbs, which resembled regular incandescent bulbs in size and shape, for \$5.00 per pack. Over 34,000 of CMP's residential customers purchased these bulbs and gave them a try.

Buoyed by the success of its 1988 campaign, CMP again launched a Lions promotion in 1989. This time though,

CMP wanted to nudge its residential customers a little further toward energy efficiency in lighting by introducing them to compact fluorescent light bulbs. A 15-watt electronic ballast compact fluorescent bulb was promoted. The unfamiliar looking bulbs, which normally retailed for over \$20 each, were sold for \$3 each by the Lions. Again, consumers decided to give an energy efficient lighting technology a try. The Lions sold over 85,000 bulbs to approximately 13,000 households in a two-week period through their door-to-door campaign.

The overall goal of CMP's endeavors in residential lighting was to encourage a retail market for energy-efficient compact fluorescent bulbs. Results of evaluations of the 1988 and 1989 Programs showed that customer acceptance of both the halogen and compact fluorescent bulbs was high. Now, CMP was faced with the question of how to proceed with its efforts. While the Lions Club promotions had proven to be successful vehicles for introducing the market to energy efficient lighting technologies, CMP was reluctant to pursue another Lions promotion. The evaluation of the 1989 Lions Program produced the following conclusions:

- Less than 10% of customers surveyed would be willing to pay more than \$10 for a compact fluorescent light bulb;
- Nearly 50% of the customers surveyed purchase their light bulbs at the supermarket; and
- Over 60% of the retailers surveyed expressed an interest in participating in a CMP sponsored coupon program to promote energy efficient lighting products.

Using this information, CMP developed its Residential Lighting Efficiency Program, a full-scale effort designed to open the retail market for compact fluorescent lighting products.

Getting compact fluorescent lighting products into the major supermarket chains would be no small feat; Twenty dollar light bulbs stood little chance of acquiring valuable shelf space in the highly competitive retail market place. The Company approached the two major supermarket chains and a drug store chain, that have numerous store locations throughout its service territory, regarding their interest in participating in a coupon promotion for compact fluorescent lighting products. Much to CMP's delight, the Company found three interested players. With the foundation of the program set, the Company finalized the design.

CMP distributed point of purchase coupons to all residential customers through their September and October electric bills. These \$9.00 coupons were redeemable on the purchase of compact fluorescent lighting products available at the three participating retail outlets. CMP promoted the program using various forms of the media.

The retailers agreed to stock a "qualifying compact fluorescent" lamp during the specified sales period of September 23 through December 31, 1991. Qualifying compact fluorescents, defined by the utility based on internal lighting research and customer survey data, included electronic ballast technologies of 15, 18 and 20 watts. The retailers purchased lamps through their own vendors and determined the retail price for their bulbs. Retailers could promote the program on their own but were not allowed to issue additional coupons for these products. (See Table 1.)

Operation Lightswitch® Impacts

For the Program to break-even based on pre-program cost-effectiveness assumptions, the Company needed to sell 59,000 light bulbs during the three month promotion. Of course CMP set its sights higher with a goal of selling

Table 1. CMP's Operation Lightswitch®

Year	1988	1989	1991
DISTRIBUTION	Lions	Lions	Retail
BULB TYPE	Halogen 42, 52 & 72 watt	CF Electronic 15 watt	CF Electronic 15 & 18 watt
PRICE	\$5 per 6 pack	\$3 each	\$4 - \$5 each
BULBS SOLD	81,000 packs	85,200	171,000
UTILITY COST	\$1,139,828	\$1,475,703	\$1,758,633

200,000 light bulbs during the promotion. Sales of the compact fluorescent light bulbs started at 1,700 bulbs during the first week of the sale and climbed steadily. By mid-October though, it became clear that if the present redemption rate for the coupons continued, the Program would not reach its break-even point of 59,000 units sold.¹

The Company assessed the situation by conducting some interim market research to determine why customers were not redeeming their coupons. Most customers who were interviewed stated that they intended to redeem their coupon but simply forgot to bring it to the store or had misplaced it.² CMP decided to change the administration of the Program to make coupons available in the store locations. In addition, demonstration persons were added to some store locations to promote the bulbs and distribute additional coupons. The results of these efforts drove sales to a weekly high of 16,915 bulbs sold during the eighth week of the promotion and sales averaged over 12,000 bulbs per week over the remaining promotional period. The Company easily reached its break-even sales point and approached its 200,000 bulb goal. By December 31st, over 170,000 bulbs had been sold.

Using information from the 1991 evaluation of their Lions Club Program on the hours of operation and replacement patterns for 15-watt compact fluorescents, CMP has estimated that these bulbs will save nearly 92,000 MWH during their projected useful life. The cost-effectiveness of the Residential Lighting Efficiency Program is presented in Table 2. CMP is currently assuming that each compact fluorescent sold will save 89 KWH per year. Furthermore, the Company assumes that half the bulbs are installed as of January 1, 1992 while the remaining bulbs will be installed at the end of the useful life or, 6 years later. Because a compact fluorescent bulb lasts much longer than a regular incandescent, purchasers benefit from the savings they incur from not having to buy incandescent bulbs. Participant benefits from the avoided purchases of incandescent bulbs are expected to exceed the participant costs for this Program and, for this preliminary analysis have been estimated as equal to participant costs. According to Maine's criteria for its All Ratepayer's Test, participant benefits may only be included up to the amount of participant costs. The resulting benefit/cost ratio, based on the total resource cost test, is estimated at 1.60. This preliminary assessment of energy impacts and cost-effectiveness will be updated as the evaluation of this Program continues.

Table 2. Estimated Cost-Effectiveness--Residential Lighting Efficiency Program (Coupon Program)

<u>Benefits</u>	
<i>Estimated Resource Impacts</i>	
Annual KWH	7,621,738
Cumulative KWH	91,460,850
Demand Reduction (KW-YR)	1,454
NPV of KWH Savings	\$2,854,040
Participant Benefits	> \$703,688
<u>Costs</u>	
Administrative	\$204,444
Coupon Payments	\$1,512,272
Total Utility	\$1,758,633
Total Participant	\$703,688
NPV of Total Benefits	\$2,854,040
NPV of Total Costs	\$1,753,274
Estimated Benefit/Cost Ratio	1.63

UI's BETTER BULB

UI's BETTER BULB program is the market retail portion of an overall residential lighting C&LM strategy that includes direct installation programs. All directly-installed compact fluorescent bulbs are provided free to customers as part of a delivered program package. While each program has a specific target market and set of objectives, UI also uses these programs to help create market acceptance of compact fluorescent technology - just as CMP used the Lions Programs. In 1990 and 1991, the Homeworks door-to-door program that focuses on primarily low-income neighborhoods installed 65,000 bulbs in 18,000 homes; the Smart Energy high-users program installed 3,270 bulbs in 750 homes; the Great-Coverup electric water heater program installed 16,540 bulbs in 3,650 homes.

The primary stated objective of the BETTER BULB program is to enhance the market share of energy-efficient compact fluorescent bulbs in the residential sector.³ The program also seeks to assist residential customers in

reducing their energy consumption and costs. BETTER BULB provides partial subsidies to residential customers who install qualified products. The program consists of three separate delivery mechanisms to facilitate consumer acceptance and stimulate sales of compact fluorescent lighting products. BETTER BULB provides rebates by mail to customers who purchase compact fluorescents through existing distribution and retail sales networks. Local Lion Clubs also offer reduced-price sales of selected compact fluorescent products with as another means of introducing customers to the relatively unfamiliar products. In addition, a highly-targeted sales promotion that began in 1992 provides incentives for the replacement of high-use incandescent lighting with compact fluorescent fixtures in common areas of multifamily dwellings. This discussion will not include the last delivery strategy since it is relatively new and there is no comparative equivalent program for CMP.

Similar to CMP, UI uses the Lions Clubs to gain initial customer acceptance of compact fluorescent bulbs. However, UI offers its Lions Club promotion on a continuous basis. Local Lions Clubs have participated in the BETTER BULB program since 1990 by selling compact fluorescent bulbs as part of their annual fund raising effort. Products are sold by the Lions throughout the year, with no definitive date for discontinuing the program. The chief vehicles for sales are community events such as fairs, trade shows, and home shows. Promotion of BETTER BULB sales is handled by the individual clubs, and is accomplished primarily through display booths at community events, word-of-mouth, and newspaper advertising.

The Lions offer a limited number of products which may change on an annual basis. In 1991, the Lions Clubs sold 18 watt magnetic compact fluorescents, which are equivalent in output to 60 watt incandescents. The bulbs were purchased by UI for \$3.40 each, consigned to the Lions at \$1.50 each, and sold by the Lions for \$5.00 apiece. The

1992 Lions Club program is selling an 18 watt electronic compact fluorescent to the public for \$9.00 apiece, and the 32 watt outdoor floodlight \$29.00. The customer financial incentives and costs are similar to the rebate portion of the program.

The Lions Club portion of the program sold 18,700 throughout 1991, for lifetimes savings of 8,090 MWH. The program achieved a high 2.3 savings to cost ratio. The arrangement with the Lions Clubs is mutually advantageous to all parties. It provides UI with an inexpensive and reliable means of introducing the general ratepayer to a new and unfamiliar technology. It provides the Lions Clubs with a welcome means to raise money for the organization's charitable activities. Lion's sales of compact fluorescent bulbs replaces an earlier fund raising campaign that sold inefficient incandescent bulbs. The Company envisions that the Lions portion of the program will be phased out once it accomplishes its educational and technology transference objectives. (See Table 3.)

The BETTER BULB Rebate Program began in August, 1991, and has no firm ending date. It provides direct customer rebates on the purchase in local stores of any retail compact fluorescent product with ballast over 10 watts. BETTER BULB offers three rebate levels from \$5 to \$9, depending on the size and type of bulb purchased. The rebate levels produce customer savings of 40% to 60% depending on the retail price range (\$11 to \$24). The rebate for the comparative 18 watt CMP rebated product is \$9, with a local retail price range of \$16 to \$22.

UI provided rebate applications to all 276,500 residential customers as inserts in the August/September billing cycle. BETTER BULB rebates are currently offered at approximately 40 participating retail outlets throughout UI's service territory, including electrical supply houses, home improvement centers, hardware chains, and general retail outlets. Highly visible stickers that specify rebate amounts are used to identify all individual packages of

Table 3. UI's BETTER BULB

Year	1990	1991	1992
DISTRIBUTION	Lions	Lions	Retail
BULB TYPE	CF Magnetic 18 watt	CF Electronic 18 watt	CF Electronic 11 to 28 watt
PRICE	\$5 each	\$9 each	\$11 - \$24 each
BULBS SOLD	4,225	18,680	3,325
UTILITY COST	\$65,000	\$160,000	\$141,900

qualified products. Most outlets also feature a shelf hanger card which prominently displays the BETTER BULB graphics and a supply of rebate applications. UI also identifies participating retailers in program promotions, such as newspaper advertisements and articles in UI's monthly bill publication, *Let's Talk*.

To receive a BETTER BULB rebate on the purchase of an eligible product, the customer must complete the application form, including the UI account number, and submit it with a valid proof of purchase (UPC code or box top showing product wattage and brand) and original dated sales receipt. All rebate applications are sent directly to an independent rebate processing center, which issues a check in the proper amount. The processing center also enters all relevant information in a tracking system, and sends the data to UI.

BETTER BULB Impacts

Between August and December 31 of 1991, the BETTER BULB retail rebate component sold 3,300 bulbs to 2,000 customers, saving 2,310 MWH during the projected useful lives of the bulbs. First quarter results for 1992 show 4,115 bulbs sold for 2,828 MWH lifetime savings. The Lions Club component sold 18,700 bulbs during 1991 for lifetime savings of 8,090 MWH.⁴

UI and its Collaborative non-utility partners use a customized Screening Analysis to evaluate the costs as compared to benefits for all programs.⁵ The Screening Analysis employs a ratepayers impact test that compares the net present value of revenue requirements with lifetime savings. No customer costs or benefits are included in the test. The Screening Analysis uses UI's avoided cost as a benefit value for lifetime KWH savings, and UI's estimate of the market value of capacity for lifetime system KW savings. A 25% environmental benefit is added to all program KWH and KW savings except for the Stand-by Generation program. The Screening Analysis is the first and final arbitrator of all Collaborative and Company decisions in the BETTER BULB and other C&LM programs.

With a low savings to cost ratio, the retail rebate component is less cost-effective than the overall program due to higher expenditures for labor, advertising and administration. However, it appears to most clearly and directly fulfill a key objective of making compact fluorescent products readily available in the local retail marketplace. UI will likely continue the retail rebate strategy in order to retain some means of influencing customer bulb purchase decisions, maintaining trade ally relationships, and building a local market infrastructure

Table 4. Estimated Cost-Effectiveness--BETTER BULB 1991 (Retail and Lions Components)

Benefits	
Resource Impacts	
Annual KWH	433,600
Cumulative KWH	5,203,203
Demand Reduction (KW-YR)	513
Costs	
Administrative	\$124,822
Rebate Payments	\$164,078
Total Utility	\$301,900
NPV of Total Benefits	\$133,583
NPV of Total Costs	\$252,378
Estimated Benefit/Cost Ratio	.53

for eventual replacement of compact fluorescent offerings in this and other energy efficient lighting programs.

Retailer Response

CMP conducted interviews with the buyers and store managers associated with the three retail chains participating in the coupon program.⁶ All retailers expressed positive opinions about the Program and indicated that sales of the light bulbs greatly exceeded their expectations. The retailers credited CMP employees on their understanding of the retail market place and commended the utility on its promotion of the energy efficient lighting products. The retailers did suggest that CMP, or the light bulb manufacturer, offer educational materials regarding the lighting products. They indicated that sales clerks were not always prepared to answer consumers' questions about these new lighting products.

None of the participating retailers had stocked compact fluorescent lighting products prior to this promotion which began in September 1991. All of the retailers interviewed indicated that the retail price of the compact fluorescents, estimated at approximately \$20 per bulb, had prohibited them from stocking the product. Retailers surveyed during the evaluation of the 1989 Lions Program indicated that a price of less than \$10 would be necessary to stimulate purchases of compact fluorescents. Once CMP offered a rebate which brought the price of the product to under \$5 per bulb, room was cleared on the shelves. In many stores, compact fluorescents were prominently displayed

at the end of aisles, premium space in the retail business especially during the holiday season.

Retailers were primarily motivated to participate in the Program to respond to their consumers' growing demand for environmentally friendly products. Store managers report that consumers are becoming increasingly aware of the environmental impacts of their choices. They see compact fluorescent light bulbs as not only using less energy but lasting longer and thus reducing the number of burned out bulbs filling landfills. Some retailers indicated that consumers were more value conscious during tough economic times. In advertisements, CMP focused on the fact that one compact fluorescent could replace approximately 13 incandescent bulbs. In addition, market forces encouraged the participation of competitors. It seems that the grocery store chains were inclined to participate because their competition might. CMP designed the Residential Lighting Program hoping that the competition inherent in the retail market place would result in retailer participation and competitive prices for the product.

Although still concerned about the high price, all three retail chains would like to continue to stock compact fluorescent lighting products in their stores. The grocery stores have so far continued to stock the bulbs and, although the current retail price is much higher than the \$4 purchase price during the promotion, the bulbs are now selling for less than \$14 each. Interestingly, this CMP-sponsored program affected the retail market outside of the limits of the utility's service territory. One grocery store chain now stocks compact fluorescents in all its stores throughout New England. Even in the absence of a utility-sponsored program, the store has reported sales of the energy-efficient bulbs in these locations.

There is a wide range of retailer's experience with the rebate portion of UI's Better Bulb that appears most directly related to the type of outlet. To date, about 38% of sales are from electrical supply outlets; 36% are from home improvement stores; 13% are from lighting specialty shops; 10% are from hardware stores; 4% are from mass-marketing outlets such as chain grocery, department, or drug stores; and 1% from catalogs. One large discount home improvement company with two local stores accounted for 30% of all rebate sales. The retailer's enthusiasm for and commitment to the program appears to be higher in smaller, specialized stores such as the electrical supply outlets. Interest in program success on the part of large general merchandise stores is difficult to sustain since competition for shelf space is fierce and staff turnover is high. UI has found that it is often difficult to secure a long-term commitment for chain stores that are

controlled from a central office and usually have many non-participating outlets outside the UI territory.

In general, retailers appear to appreciate the provision of financial incentives to customers to help them make sales. Like CMP, UI discovered that in-store supplies of coupons are, not surprisingly, critical to sales volume. One large volume retailer noticed a significant drop in sales volume when the in-store supply of rebate coupons ran out.

Survey Results

Customer surveys are essential to the evaluation of residential lighting programs. These surveys provide data on bulb replacement patterns and lamp burn times which are used to estimate the energy impacts of the programs. In addition, information regarding premature burn-out or removal of the bulbs will help to further refine the savings estimates.

CMP has twice conducted customer surveys to evaluate the impacts of its Lions Programs and, has just recently completed surveys with customers who purchased bulbs through the coupon promotion. As part of their evaluation efforts, UI also surveyed participants in the Lions Club and retail portion of their BETTER BULB Program. These extensive communications with participants in residential lighting programs have resulted in a better understanding of the market for energy efficient lighting technologies.

In its 1989 Lions Program, CMP distributed 85,200 compact fluorescent light bulbs, an average of 6.5 bulbs per participating household. Approximately two-thirds of these bulbs had been installed when customers were surveyed soon after the Program had ended. Preliminary data from the evaluation of the coupon program indicates that participants purchased an average of 3 bulbs.⁷ Although only 2 coupons were sent to each residential customer, interested purchasers could obtain additional coupons from the customer service desks at the retail outlets. Participants in lighting programs with firm ending dates, like the CMP Lions and coupon programs, might be inclined to "stock up" on light bulbs. If they perceive the energy-efficient light bulbs as being a good value, they might purchase more than are immediately needed and save them for installation at a later date. Similarly, UI discovered that most participants in their retail sales program purchased two or more bulbs. The customer survey revealed that 95% of the bulbs purchased within UI's service territory had been installed. Although participants in the UI Program brought home fewer bulbs, nearly all had been installed. Since UI's rebate had no

expiration date, consumers might be more likely to purchase light bulbs on an as needed basis.

Both utilities have surveyed purchasers of energy efficient light bulbs regarding the installation location of the bulbs in their homes. In its evaluation of the 1989 Program, CMP found that most of the compact fluorescents purchased were installed in living rooms (27%), bedrooms (17%) and kitchens (16%). Likewise, UI found that most purchasers installed the bulbs in living rooms and kitchens.⁸ In addition to where the bulbs are installed, information on the burn times was collected. CMP has collected usage data for the evaluations of its two Lions programs and has found the information to be very consistent. CMP estimates that the lights are on approximately 4 hours per day in the non-winter months and nearly 6 hours per day during the winter months. UI collected information on hours of operation and learned that approximately 65% of the bulbs are used from 2 to 6 hours per day while 10% are used more than 10 hours per day. Interestingly, UI customers reported virtually no use of lighting during the morning hours where CMP's customers reported that over 10% of the daily light bulb usage occurred between 6 a.m. and 10 a.m. This difference might be explained by the location of the light bulbs. While most of CMP's participants in the 1989 program reported installing the light bulbs in the living room, as did participants in UI's coupon program, the second most frequently reported installation location for the CMP participants was the bedroom. Early morning lighting usage is likely to be common in bedrooms.

Information on customer satisfaction with compact fluorescent bulbs is available in CMP's evaluation of the 1989 Lions Club Program (and will be assessed for participants in the coupon program at a later date). One half of the purchasers of compact fluorescents in 1989 were completely satisfied with the bulb, while 36% reported being fairly satisfied with the bulb. Only 8% of the purchasers were not at all satisfied with their compact fluorescent bulb. Customers who were completely satisfied indicated that the bulb: light was good (49%); would last longer (38%); and would save electricity (26%). UI found nearly identical levels of satisfaction among purchasers of energy efficient bulbs. A little less than 50% of the UI participants indicated they were completely satisfied with the energy efficient bulbs, another 44% were fairly satisfied, while 5% were not at all satisfied. UI's customers mentioned such favorable features as energy savings (18%), good light (18%), long life (14%), and money savings (8%) as reasons for satisfaction.

Dissatisfaction with compact fluorescent bulbs has not been a big problem for either utility. A few customers

surveyed by both utilities complained about bulb brightness, the size, fit or shape of the bulb, and flickering or taking too long to go on. These participant impressions of compact fluorescent bulbs reinforce survey findings in UI's other residential direct installation programs.

Nearly 70% of the purchasers of compact fluorescent bulbs from the Lions Club in 1989 said they would definitely or probably purchase bulbs from the Lions again. Only 23% of the purchasers would be willing to pay up to \$9.95 for an energy-efficient bulb while only 8% and 5% would be willing to pay up to \$14.95 or \$19.95, respectively. This information was used by CMP in developing its coupon program. CMP will assess the likelihood of future purchases of compact fluorescents and the price sensitivity for participants in the coupon program. Over 70% of the participants in UI's rebate programs indicated they definitely or probably will purchase 2 or more additional bulbs with a rebate. Slightly less than 50% said they would purchase the compact fluorescents in stores without a rebate, with most willing to pay \$9.95 or more. A little less than 20% indicated they would pay \$19.95.

Purchasers of light bulbs through CMP's Lions programs in both 1988 and 1989 tended to be more highly educated than the population in general. UI participants were better educated, slightly older, and had higher incomes than non-participants. The program participants surveyed by UI were more likely to feel that they kept their homes brighter than their friends, that lighting was a significant part of their electric consumption, and that energy efficient light bulbs could provide real savings.

Conclusions

Both CMP and UI, using their experience from previous lighting programs, implemented programs in 1991 that stimulated a retail market for compact fluorescent lighting products. CMP discontinued its Lions promotions and offered customers a point of purchase coupon redeemable on the purchase of a variety of electronic ballast compact fluorescent lighting products. Participating retailers sold over 170,000 energy-efficient light bulbs in a 3 month period. UI sold 3,300 compact fluorescents by offering a mail-in rebate to its consumers. In addition, UI continued its Lions promotion and sold 18,700 bulbs to its customers.

Preliminary findings seem to indicate that CMP's Operation LightSwitch Program was successful in achieving its stated objectives. Compact fluorescent bulbs now appear in major retail outlets in the State of Maine, even in the

absence of a utility sponsored program. In fact, the retail market in New England has been affected by an energy management program which was offered only in CMP's service territory. CMP's carefully managed plan, beginning in 1988 with the first Lions promotion, appears to have met its major goal: Consumers may now be able to shop for energy saving compact fluorescent light bulbs at convenient locations and find them at a competitive price.

As a result of the survey findings, it became clear to UI that they should attempt to manage customer expectations about energy efficient lighting. Consistent with UI's strategy of intervening within the established market framework, UI would prefer to provide the information to educate the consumer about compact fluorescent technology. The purchaser should understand the difference between magnetic and electronic bulbs, proper installation, and proper choice for wattage replacement. The consumer material should point out the advantages and disadvantages of selecting particular products, and the effect on cost.

UI may use the point of purchase lighting rebate approach in the future in order to jump-start rebate participation when sales begin to lag. UI may also consider that approach to specifically target certain market segments, or as a strategy to follow the expiration of direct installation programs. The Company hopes that the compact fluorescent market will become self-sustaining within several years.

Endnotes

1. CMP's Energy Management Planning Department estimated pre-program cost-effectiveness using the criteria outlined in the Maine Public Utilities Commission's Chapter 380 and assumptions regarding costs and benefits from the Residential Pilot Lighting Efficiency Program Evaluation (March 1991).

2. Operation Lightswitch Survey conducted by CMP's Market Research Group (October 1991).
3. Energy Action '90 (April 1990).
4. From UI's tracking system.
5. Energy Action '90 (April 1990).
6. As part of the evaluation of its 1991 coupon program, CMP has interviewed store managers and buyers from the participating retail chains.
7. Preliminary data from the evaluation of the 1991 coupon program.
8. Customer Survey, BETTER BULB, January 1992.

References

Central Maine Power Company. 1990. *Evaluation Report of the Pilot Lighting Efficiency Program*. Augusta, Maine.

Central Maine Power Company. 1991. *Residential Pilot Lighting Efficiency Program Process and Impact Evaluation*. Augusta, Maine.

United Illuminating Company. 1990-1992. *Energy Action*. Conn. DPUC, Docket Number 90-04-01, 91-04-01, 92-04-01.