

UNITED ILLUMINATING COMPANY

A Time for Consumers to Pass the Torch

PROJECT SNAPSHOT

PROJECT

Multi-day events at which consumers can exchange lamps with halogen bulbs for those with fluorescent bulbs

TECHNOLOGY

Torchiere-style lamps with fluorescent bulbs

CO₂ EMISSION REDUCTIONS

Approximately 1,970 tons per year

INVESTMENT AND SAVINGS

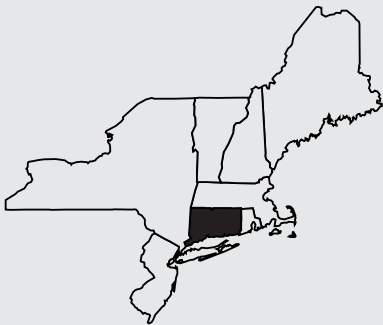
Approximately \$500,000, saving consumers more than \$270,000 a year

LESSONS LEARNED

By focusing on other issues like personal safety, the program can draw in consumers who otherwise might not participate.

FUNDING SOURCES

Funding for both the events and the lamps came from the conservation surcharge on all electric bills in Connecticut.



INTRODUCTION

Torchieres – those tall floor lamps that illuminate rooms by reflecting light off the ceiling and walls – have become all the rage in the past 20 years. Their halogen bulbs provide very bright, indirect light that is easy on the eyes; they generally come with dimmer switches; and, perhaps best of all, they are cheap. Prices can run as low as \$15. Unfortunately, at 300 to 500 watts, halogen bulbs are both highly inefficient and potentially dangerous. They quickly can become hot enough to ignite many fabrics. Thus, as torchieres have permeated American homes and offices, they have placed higher loads¹ on regional power grids, and caused many fires. A secondary disadvantage arising during summer is that, when halogen lamps heat the indoor air, they force air conditioners to work harder and consume more energy.

Because of these lamps' poor energy performance, environmental advocates and regulators have supported utilities' efforts to work with their customers to replace halogens with other types of lamps. Because of the fire risk, fire departments and other safety officials are joining these efforts. Recently, the United Illuminating Company (UI), Connecticut's second-largest electric utility, developed a successful formula for getting halogen torchieres "off the street." Other utilities are using it as well, and achieving similar results.

THE PROJECT

A number of electric companies and related organizations have presented customers with the opportunity to trade in halogen lamps for fluorescent lamps, usually as part of a larger event. However, in May 2000 UI hosted a public program that set records for lamp replacement, sold tens of thousands of additional fluorescent bulbs and presented thousands of consumers with detailed information on energy efficiency. Over a period of a week and a half, the company gave away 5,000 fluorescent torchieres, and sold at a discount some 16,000 compact fluorescent light bulbs. Both are highly efficient and safe.

Rick Rosa, an energy efficiency Program Director at UI, attributes the success of the program to three key features:

- UI rented space in a large shopping mall for an extended period, ten days, and attracted local media coverage during the event.
- The company got the attention of consumers by focusing on fire safety, and then introduced them to energy savings.
- Rather than sell the fluorescent torchieres, even at a large discount, it simply gave them away.

By renting retail space at a popular shopping mall, UI discovered that it could reach many more people than at a single event like a county fair. Because the torchiere turn-in was much longer than similar events, the company could push for positive exposure in the early stages in order to attract an even larger crowd towards the end. And it was aggressive in seeking media attention; UI placed ads in local newspapers and on radio stations, and even drew coverage from local TV.

The link to fire safety was the second key success factor. "This turn-in not only saves you money, it may save your life," UI's first newspaper ad proclaimed in bold letters. At the mall space it rented in Milford, CT, the company displayed materials from local fire departments, and firefighters joined utility staff on several occasions. Although many people were drawn to the event out of an interest in safety, UI found that, once there, they tended to stay and learn more about the environmental and cost advantages of energy efficient lighting. The company gave away torchieres manufactured by Maxlite, TCP and Good Earth. It also sold compact fluorescent bulbs made by TCP, with a \$5 instant rebate. Consumers paid an average of \$2 (depending on wattage) for bulbs that retail for about \$9. The third key success factor was UI's decision to give away fluorescent torchieres to customers turning in halogens. At most prior

LESSONS LEARNED

For years electric utilities and environmental advocates have been attempting to persuade consumers to focus on energy efficiency – but with only moderate success. When energy prices are low, efficiency is simply not a high priority for most people. Safety, on the other hand, always is a priority. UI's Rick Rosa points in particular to the decision to focus on that issue, plus the related media coverage. This conclusion is supported by the jump in turnout after TV news coverage, which focused primarily on the fire hazard of halogen lamps. Nonetheless, in view of the 29,000 compact fluorescent bulbs sold at the event, consumers became interested in energy efficiency once they took the time to consider it. Stated broadly, the lesson here is that consumers can be educated about energy efficiency in a number of ways, and one particularly effective approach is to first interest them in a related issue they feel strongly about.

FUTURE COMMITMENTS

As a follow-up to the first turn-in event in May 2000, UI worked with Connecticut Light & Power (CL&P), which serves about 80 percent of the state, to host a second one. This event was even more successful. Some 12,000 halogen lamps were replaced with safer and more efficient models. Then, in October 2000, a coalition of other northeastern utilities held a turn-in program in conjunction with National Fire Safety Week. All plan to sponsor similar events in the future.

COMPANY PROFILE

United Illuminating serves more than 314,000 electricity customers in eastern Connecticut. The company is a subsidiary of UIL Holdings Corporation, which also owns APS, Xcelecom, United Capital Investments and United Bridgeport Energy. Based in New Haven, UI was incorporated in 1899. Its revenues were \$680 million in 1999. Like many other utilities in the Northeast, UI recently sold

ENERGY SAVED BY REPLACING HALOGEN TORCHIERES

	LAMP WATTAGE	HOURS OF OPERATION PER YEAR	ANNUAL kWhs USED
HALOGEN	400	1,500	600
FLUORESCENT	55	1,500	83
ANNUAL ENERGY SAVINGS FOR ONE LAMP			518
ANNUAL SAVINGS FOR 5,000 LAMPS			2,587,500

events, as well as in other utility-run efficiency programs, customers have been required to pay for lamps. Although prices were discounted, unfortunately this did not appear to attract as many customers as the prospect of a gift.

The price that UI paid for the lamps and the difference between the price it paid for the bulbs and the discount to consumers were covered by Connecticut's energy efficiency surcharge. The surcharge, which all utility customers pay, helps to capture energy efficiency opportunities that otherwise would be lost due to market imperfections, including lack of consumer awareness of the economic advantages of efficient lighting and difficulty paying the up-front costs of this type of lighting. For most energy efficiency programs of this type, studies show that over the longer term customers recover the general surcharge in the form of lower electricity costs.² In addition to making electricity markets more efficient, these programs are an important part of national efforts to reduce CO₂ emissions.

THE RESULTS

Based on the results of similar events, UI predicted that it would replace about 1,000 lamps during the entire torchiere turn-in. The company did much better. During the first seven days, it replaced 1,500 lamps. On the Thursday night preceding the second weekend, several local TV news stations showed up. Reporters interviewed

UI staff, and cameras rolled as firefighters demonstrated how halogen lamps could ignite fabric. The public's response was remarkable. During the final weekend, UI replaced roughly 3,500 lamps – more than twice as many in much less than half the time. The table below shows the estimated energy saved by replacing one halogen lamp, as well as savings from replacing 5,000 of them. Results are based on estimated average lamp use of 1,500 hours per year. The energy conserved by replacing one lamp – 518 kWhs – would save a Connecticut residential customer between \$46.62 and \$62.16 per year, depending on their electricity rates.

Based on annual savings of 2,587,000 kWhs, the UI torchiere turn-in event reduced yearly CO₂ emissions by nearly 1,970 tons, SO₂ emissions by more than eight tons and NO_x emissions by nearly three tons.³ This is roughly equivalent to a reduction in annual oil consumption of 3,600 barrels, or the removal of 277 passenger cars from the road. The compact fluorescent bulbs UI sold also will save a considerable amount of energy by replacing incandescent bulbs. The program also is likely to offer other, unquantifiable benefits. Chief among them is consumer education. This includes increased awareness of individual energy use, as well as the ability to identify and eliminate inefficient uses of energy in the home. This makes it all the more likely that consumers will tell others about the lamp exchange and what they learned.

its power plants in response to the deregulation of the electricity industry. The company now provides electricity transmission and distribution services, along with billing, energy efficiency and related services.

For many years, UI has offered energy efficiency programs to its customers. Right now, state energy regulators require that it collect a surcharge on all electricity sales, and use the proceeds to manage programs that increase energy efficiency within its service area. Nonetheless, UI's torchiere turn-in event represented an innovative departure from traditional utility energy efficiency programs in several important ways.

¹ Halogen lamps not only consume a great deal of electricity, measured in kilowatt hours (kWh), but also require that the supply system – power plants – be expanded to accommodate the new demand for energy they represent. That new demand, usually measured in megawatts (MW), means increasing the capacity of (and capital investment in) the supply system to accommodate the increased load.

² In other words, while the surcharge slightly raises rates (cost per unit of electricity), efficiency measures reduce the amount of electricity used, as well as the monthly electricity bill.

³ All emission reductions cited here are calculated based on New England regional marginal emission rates, provided by ISO New England. See Appendix A for a discussion of these calculations.

CONTACTS

Rick Rosa

United Illuminating Company
203-499-2632
www.uinet.com

Sharon Flannery

Connecticut Light & Power Company
860-832-4974
www.cl-p.com

CLEAN AIR-COOL PLANET CASE STUDY RATING

This case study reduces CO₂ emissions equivalent to the following:

Avoiding the consumption of 10 barrels of oil per day.



OR taking 277 vehicles off the road per year. (1 car = 50 vehicles)



Assumptions: 1,093 lbs of CO₂ per barrel of oil. Vehicles are average passenger cars (approximately 20 lbs CO₂ per gallon of gasoline - 22.5 miles per gallon, averaging 16,000 miles per year)