The Success of the DesignLights™ Consortium: Moving the Commercial Lighting Market beyond Technology and into the Design Community

Michael Mernick, ICF Consulting, Inc.
Sarah Dagher, Northeast Energy Efficiency Partnerships, Inc. (NEEP)
Brad Kates, Opinion Dynamics

ABSTRACT

The DesignLights™ Consortium (DLC) is a regional collaborative of utilities and other organizations whose purpose, as part of its mission, is to facilitate the implementation of improved design practices in all parts of the commercial lighting market such that high-quality energy-efficient lighting design becomes common practice. Guiding the efforts of the DLC is the need to step beyond traditional Demand Side Management (DSM) to advance the commercial lighting market beyond just technology, and into the actual design of lighting systems. The DLC works to provide a longer lasting and more significant market transformation effort, one that transcends issues, requirements and the uncertainties of the latest and greatest lighting technologies.

To promote the concept of high-quality energy-efficient lighting design, DLC created the lighting *knowhow™ Series*. These lighting design guides are intended to provide key market players, such as electrical contractors, with valuable, unbiased technical assistance on lighting design specifications relevant to office, small retail and classroom building spaces. Training seminars have been developed to introduce the *knowhow™ Series* to electrical contractors and to provide direct guidance to those who specify, design and install lighting systems.

The authors will present the lighting *knowhow™ Series*, and detail the development and implementation of the training seminars and other market-based information. This paper will focus on the results of the initial market test phase to introduce and disseminate the guides to the target audience, lessons learned, and how the experience of this effort can be applied to other regions and initiatives.

Introduction

The DesignLights™ Consortium (DLC) is a regional collaborative of utilities and other organizations influencing commercial lighting design toward quality, comfort, and efficiency during remodeling, renovation, and new construction activities. In order to achieve its mission, the DLC is communicating the benefits of high-quality energy-efficient lighting design to all players in the commercial market place.

DLC sprang from a growing recognition that the next frontier in lighting efficiency involves improved design practices. Utility efficiency programs in the 1990s were widely credited with helping to make T8 fluorescent lamps and electronic ballasts standard practice for most new commercial construction in New England. To further increase efficiency and sustain the associated energy benefits, it is necessary to concentrate on lighting design

practices rather than simply technologies, by improving design practices and increasing the amount of space with well-designed lighting systems.

In keeping with growing regional emphasis on market transformation, the DLC was formed so utilities and other interested parties could work together to achieve energy savings by influencing naturally occurring lighting events, such as remodeling, renovation or new construction, rather than to create lighting jobs by offering rebates for lighting retrofits. The main participants in the DLC are New England utilities and organizations including NSTAR Services Company (formerly through Boston Edison and Commonwealth Electric), Eastern Utilities Associates, National Grid (formerly through New England Electric), Northeast Utilities, NYSERDA, United Illuminating, and Unitil. Coordination and facilitation is provided by the Northeast Energy Efficiency Partnerships, Inc. (NEEP) which is partially supported by the United States Environmental Protection Agency. To reach the goal of making high-quality energy-efficient lighting design become common in the marketplace, however, the DLC enlists the involvement of other market players and closely coordinates with other lighting market transformation activities. Other potential participants needed to complement the outreach include lighting equipment manufacturers, lighting designers, architects, contractors, energy service companies, trade associations and others interested in high-quality energy-efficient lighting.

Defining high-quality, energy-efficient lighting presents a unique challenge to the marketplace when perceptions of quality and efficient lighting design often differ from one lighting profession to another. The definition of high-quality, energy efficient lighting that DLC has assigned advances current utility demand-side management (DSM) program implementation to another level of complexity. The definition includes not only concepts of lighting that result in improved efficiencies but that result in improvements in the visual environment that may lead to non-energy savings more enticing to commercial lease space tenants and building owners. Some of the following lighting concepts helped to define the term for DLC: reduced glare for the work environment, adequate foot-candles (which are tied into IES standards) for work space, lower lighting power densities, and improved feeling of comfort that adds to the drama of the space and productivity.

To help define the lighting design market and determine the needs and actions of the various lighting design decision makers, the DLC conducted market research through telephone surveys and focus groups. Based on the market research and findings from two other studies, the DLC decided that initial marketing activities of the group would be targeted to electrical contractors that provide lighting design services for remodeling, renovation, and new construction markets. One of the first products from the DLC is three recently completed commercial lighting design guides, published as the lighting *knowhow™ Series*, for office, small retail and classroom spaces. Initiative sponsors have also identified potential partnerships with customers for demonstration projects to test high-quality energy-efficient lighting design and to develop decision-making protocols to encourage thoughtful design of lighting in commercial spaces. Training seminars were developed to promote the *knowhow™ Series* and introduce electrical contractors to the lighting design concepts included in the guides. Activities for the year 2000 include the finalization of a series of 12 lighting *knowhow™ Series* Case Studies to demonstrate the benefits of high-quality, energy-efficient lighting in small retail, classroom and office building spaces, and the initiation of a detailed program evaluation.

Because this market transformation effort attempts to link high-quality with energy-efficient lighting designs, the traditional quantitative approach to measuring savings (e.g. delta watts/sqft., power density levels, etc.) is complicated by the non-energy benefits of high quality lighting design that are not so quantifiable (e.g. productivity improvements, enhanced rentability rate, etc.). One of the evaluation challenges that DLC faces over the next year is to try and determine how to measure non-energy related benefits in such a way that is integrated into societal benefit, as a whole.

Initiative Goals for Success

It is the desire to unite the long-term energy savings benefits of energy efficient lighting technology, with the improved visual performance attributes that result from high quality lighting design, that has led the DLC sponsors to support this regional market transformation effort for commercial lighting. In order for success to be achieved, DLC had to establish goals and objectives that would address existing educational and market barriers to quality and efficient lighting design need to be addressed.

There are many barriers to achieving energy efficient and quality lighting design. Many are cost or time barriers, such as: budgets; timely availability of products; time constraints; existing or anticipated regulations; maintenance considerations; available rebates; and length of payback. Others are knowledge barriers such as: lack of education among decision-makers; occupant concerns; and lack of familiarity with new technologies. Finally, some are motivational barriers, such as: fear of trying something untested, fear of rapidly changing technology, or waiting for new technology to arrive to the market; and integrating old and new components to meet rebate programs or efficiency requirements.

In April 1998 the DLC developed specific goals, formed into six separate mission statements, that were determined to lead this regional market transformation effort to success and overcome some of the educational, cost and motivational barriers. As of April 2000, headway has been made in accomplishing these goals.

Develop useful tools for those who influence design and installation of lighting systems.

The DLC produced three lighting *knowhow™ Series* guides to promote high-quality, energy-efficient lighting in commercial spaces and classrooms.

- Office Lighting *knowhow™*
- Small Retail Lighting *knowhow™*
- Classroom Lighting *knowhow™*

These tools for electrical contractors, lighting designers and others influence the design and installation of quality, energy efficient lighting systems in these important commercial markets. The *knowhow™ Series* was distributed to more than 2,000 individuals.

Foster improved design practices in the commercial lighting market.

The DLC seeks to influence major commercial lighting market constituents such as equipment manufacturers and distributors, electrical contractors, lighting designers, architects, building owners and managers.

Strategic Alliances

The DLC established a strategic alliance with the National Council on Qualifications for the Lighting Professions [NCQLP] with the intent of placing a portion of the DLC agenda

on the national certification exam.

Training Programs

The DLC developed the *knowhow™ Series* Training Program for contractors. Five training sessions have been held for lighting and electrical contractors and up to twelve more are scheduled for 2000.

Contractors attending training sessions say that they will use the *knowhow™ Series* in their day-to-day work. 86% of respondents to a feed-back survey say they better understand how to design and promote high quality, energy-efficient lighting as a direct result of the *knowhow™* Training Program.

Encourage the highest quality lighting from the standpoint of comfort, productivity, aesthetics and energy efficiency.

Case Studies: DLC encourages and promotes thoughtful lighting design. To illustrate principals from the *knowhow™ Series* guides, the DLC documented twelve different *knowhow™ Case Studies.*

Promote lighting with lower power-density that is superior to conventional practice.

The current *knowhow™ Series* guides and training exemplify how lighting design with lower power-density can be superior to current lighting practices. In 12 DLC Case Studies, high-quality lighting solutions achieved less energy demand than standard practice approaches in the Northeast. (DLC will be undertaking an extensive evaluation effort of the regional effort to determine the overall savings potential that can be achieved from high quality, energy-efficient lighting design.)

Training creates a "spillover" effect when highly trained lighting contractors, designers, knowledgeable utility field personnel and better-educated customers concurrently spread the word on quality lighting. The *knowhow™ Series* Training Seminars have educated almost 200 contractors.

Educate owners, developers, electrical contractors, designers, manufacturers and others that influence lighting design, specification, selection, and installation practices.

By distributing the lighting knowhow™ Series, case studies, and by providing training, the DLC provides education, targeted to the different market players, on thoughtful commercial space lighting design practices that provide the highest quality from the standpoint of comfort, productivity, aesthetics and energy efficiency.

Characterize the commercial lighting market with the intent to support market ransformation.

To more effectively address specific market segments the DLC continues to refine the characteristics of the commercial lighting market through research and by soliciting feedback on the *knowhow™ Series* publications and training.

On an ongoing basis, sponsors and participants support the Consortium's effort through market research, customer outreach and education, customer/contractor incentives, development of technical guides, demonstration projects, lighting professional/contractor training, and support for improved building energy codes and implementation. Through the efforts already underway, and those planned for the next year, there will be an increase in the supply of trained contractors which will lead to a demand for better lighting practices from

those who are, or who inform, the decision makers.

So, while the ultimate goal of this program is energy efficiency, the critical interim step that DLC is taking is to bring about a fundamental change in the lighting design practices that will result in the installation of more energy-efficient technologies through better design. This approach will provide the catalyst for savings (both energy benefits and non-energy benefits) that sustain their affects beyond the previous utility program design efforts that offered incentives for energy-efficient lighting technologies.

Lighting Design Market

The DLC's mission is to influence the decision makers in the lighting market to understand and consider the benefits of high-quality, energy-efficient lighting design. The primary beneficiary of better lighting is the owner and occupant of the building. However, to provide the benefits of high-quality lighting to this consumer, there are many others in the decision-making chain that need to be educated and motivated. These players include property managers, electrical contractors, electrical equipment distributors, and lighting equipment manufacturers, (hereafter, referred to as "the market players"). Brief summaries of the market players are presented below.

- Electrical Contractors: Electrical contractors are often key players in the selection and specification of lighting systems in small commercial buildings. This is especially true in remodeling work or projects where the building owner/developer employs contractors in a design/build capacity without detailed professional design documents.
- Building Owners and Managers: Building owners and managers are the end users of commercial building lighting systems and the primary decision makers on the systems and designs to be chosen for a building. Often, however, they delegate this decision making down to others players such as electrical designers or contractors.
- Electrical/Lighting Designers: The electrical design profession is a relatively diverse group. In many cases, the lighting and electrical design for a building is done by an electrical engineering consulting firm, under subcontract to the building architect and/or building owner. In very high end or specialized cases, lighting designs may be subcontracted to specialized lighting or interior designers, but is often done by electrical engineers or technicians without much specialization in commercial building lighting systems. In some cases, lighting is designed by equipment distributors or manufacturers' representatives who have supplied the engineering firm (or electrical contractor) with equipment and satisfactory layouts in the past.
- Electrical Distributors/Supply Houses: Often, electrical contractors rely on their distributors and supply houses for availability of lighting equipment and, sometimes, layouts/designs for some building types. Thus, distributors can have a significant effect on the equipment ultimately installed in some buildings.
- Architects: Architects are very influential in making lighting design decisions on large remodeling and new construction projects. However, they are not the target for

the first guides published. Future publications of the *knowhow™ Series* in 2000 may actively target architects.

- Manufacturers' Representatives: Manufacturers' representatives can also be a major influence on lighting designs. Market research and industry experience has shown that manufacturers' reps often do lighting layouts and run software tools (including layouts and energy analysis tools) on behalf of electrical and mechanical engineers a large percentage of the time. Because of this influential role, manufacturers' reps can have a substantial effect on the eventual lighting layouts, but are generally constrained to use equipment made by the manufacturers and suppliers that they represent.

Development of the *knowhow™ Series*

Previous market research efforts, along with the prior experience of utility sponsored demand-side management programs (DSM) for commercial lighting, helped to direct DLC interests to focus on developing tools that would influence standard practice for the design of lighting systems for commercial building construction, renovation, and remodeling projects. One such study reported that a key to increased acceptance for energy-efficient design practices in many markets, is to create standardized products and innovations that are readily available and identified as representing quality lighting design practices. For example, the study showed that for non-customized new construction and remodeling markets (e.g. speculative and rental, class B space, and small retail), the widespread use of improved lighting design would be assisted by the development of standardized guides that minimize the need to retain highly trained and costly design professionals for new construction or remodeling applications. Furthermore, this market is characterized by low participation rates in utility sponsored energy-efficiency programs and therefore has the greatest need for market transformation. As a result of the findings, one of the primary focuses of a coordinated market transformation effort is to develop voluntary lighting design guides for regional use to address this particular market.

DLC sought to develop a tool that would influence market players such as building owners and managers, the design community, electrical contractors, trade associations, and other trade allies to identify, design and install energy-efficient lighting components and systems while maintaining high-quality lighting standards.

It was important to the sponsors that the guides be developed based on an assessed need for such a market-based tool. In particular DLC wanted to:

- document other efforts at producing guides/tools for lighting design,
- qualitatively assess the potential market for guides (i.e., would market players be likely to use guides developed through this project),
- document the current lighting design practices to support guide development,
- facilitate consensus in the guide development process with the regional market players,
- develop voluntary high efficiency lighting design guides, and
- present the findings and guides back to the DLC sponsors and a voluntary

Lighting Industry Advisory Group and other interested parties for final review prior to publication.

The completed guides were published as the lighting *knowhow™ Series* and promoted to all relevant market players and customers in the region. It is expected that in the near term, this should make participation in energy-efficiency programs more appealing, reduce overhead costs, and help bring quality lighting to spaces that often lack the benefit of sophisticated custom design. In the long term, the sponsors hope that the *knowhow™ Series* will help encourage more energy-efficient and high-quality lighting design practices.

The lighting *knowhow™ Series* publications take the form of an 8-page, 8 1/2" by 11", color document that contains educational material about lighting quality, and easy to use instructions for the design and selection of energy-efficient lighting equipment and systems. The intent of the guides is to go beyond simple technology changes and to provide efficient and effective design selections for the space. The guides include prototype equipment specifications and layouts for common spaces. Each of the *knowhow™ Series* guides were developed following a market assessment to characterize the existing baseline of lighting design and energy use in the selected building and spaces.

Training Seminars

The objectives of the training seminars are threefold. First, the seminars will be used to promote the guides and train electrical contractors on lighting design concepts included in the lighting *knowhow™ Series.* (Although the main audience is electrical contractors, lighting distributors, manufacturer representatives, and architects may also be invited to participate.) Second, the seminars will be used to test this approach in promoting the guides versus other approaches such as direct mail. And third, the seminars will allow the DLC to get contractor feedback on the value of the guides and possible additions or revisions.

In 1999, the *knowhow™ Series* were distributed to approximately 120 electrical contractors in five seminars. There are several reasons for not distributing the guides to everyone all at once. First, the DLC needs to make sure that the guides provide good information in a format best for electrical contractors. Once the initial training seminars are held and evaluated, any necessary changes to the guides can be made before mass production and distribution.

The second reason is the distribution channel. The DLC believes the training seminars hold the best promise to get the message to electrical contractors. However, this channel needs to be tested. The seminar evaluations will provide the DLC with the information needed to make a determination on the effectiveness of the seminars.

To meet the short-term goals of this program, the DLC hired a contractor to handle all aspects of the training seminars. With the DLC's oversight and assistance, the contractor was responsible for developing a contact list of the target audience for the guides - electrical contractors, developing a training syllabus and seminar materials, providing a summary of utility lighting rebate information, all seminar logistics, recruiting participants, conducting the seminar and following up with seminar participants on the usefulness of the *knowhow™ Series*. The seminars were developed not only to present the lighting *knowhow™ Series*, but also to

"sell" and promote them to the target audience by demonstrating how the *knowhow™ Series* can help business growth. The specific sections of the training seminar are:

1. "What is High-Quality Energy-Efficient Lighting Design?"
2. "How You and Your Company can Benefit from Promoting and Installing High-Quality Energy-Efficient Lighting"
3. "How to Promote High-Quality Energy-Efficient Lighting"
4. "How to Use DLC's *knowhow™ Series* Guides as a Tool to Promote High-Quality Energy-Efficient Lighting"
5. "Financial and Other Incentive Programs"

The seminar was developed with the flexibility to adjust to minor modifications as directed by the DLC Sponsors, and each seminar was adjusted to fit the needs of that specific audience. As a component of the training seminars, the contractor presented the most current information available on the various utility incentive programs from each of the sponsoring utilities. Seminar participants stated that there may be advantages to the region's utilities standardizing their programs, since many contractors work across multiple utility service territories.

The seminars are typically held over breakfast and last approximately two hours. The seminars are a combination of technical material and salesmanship. Ideally, electrical contractors will not only walk away with the technical data but also with an idea of how high-quality energy-efficient lighting design can be promoted to building owners and managers as value-added services.

One approach to delivering the training seminars is to do them during annual or periodic meetings of regional and national electrical contractor associations. These meetings are ideal since (1) they are already being attended by the target audience and (2) meeting sponsors are always looking for people to provide educational seminars at the meetings. This approach was tested for the first training session in 1999.

knowhow™ Series Training Seminar Results

To evaluate the seminars, the contractor implemented both in-seminar and post-seminar evaluations. A primary element of the seminars was to determine if the trainings and the *knowhow™ Series* would be successful in influencing contractors' decisions regarding high-quality energy-efficient lighting. That was partly determined by following up with each attendee within 30 days of the conclusion of the seminars. Each attendee was contacted to determine if they were utilizing the information and materials provided at the seminar. A total of 29 participants (32% of eligible participants) responded to the survey. The project implementers felt that the lower than expected participation rate was due to the short timeframe (30 days after attending the training) and the December holiday season.

Of those participants that did respond, 65% felt that they had learned something new or valuable at the seminar. 30% did not think so and 5% were not sure. When asked if the *knowhow™ Series* was useful in their day-to-day practices, 30% responded that they have had the opportunity to use the guides, 25% felt that they would not use the guides because of their

lack of involvement in the design process, and the remaining 45% had not had the opportunity to use the guides in the short period of time since the training. When asked how the *knowhow™ Series* was most useful, 43% of the respondents stated that the guides were most useful as a technical resource, while 18% felt that they were most useful as a marketing tool. The surveys issued also produced a number of qualitative indications that the seminars have been successful. A number of market players expressed a strong interest to host or sponsor future seminars.

DLC is continuing to gather information from 1999 seminar attendees. A component of the year 2000 activities includes following up with the last year's participants to determine the usefulness of the *knowhow™ Series*, now that attendees have had additional time to experiment with the guides. While DLC does not consider the results of the surveys conducted in 1999 to be statistically significant, they have provided insights into the usefulness of both the guides and the training seminars. That information was helpful in identifying the lessons learned in the project's first year of implementation.

Key Market Indicators

Performance indicators, measured over the long term, pose an interesting challenge for assessing the effectiveness of regional market transformation efforts for commercial lighting. One of the primary considerations for measuring the success of this regional effort is looking at how the market players have changed their practices of specifying, selecting, designing and installing high quality, energy-efficient lighting systems. DLC will most likely be setting precedent in this area, whereby certain "measures of success" will be tied into a behavioral component of lighting, that which addresses quality, comfort and aesthetics, which is subjective in nature. Along these lines, it will be important that reliable baseline data has been documented as to what the current practices are with individual market players and how those practices have been changed or affected by market transformation efforts.

In order to measure progress toward long-term goals, it will be necessary to: 1) better quantify the amount of commercial floor space remodeled or constructed each year; 2) estimate what the lighting loads are for remodeled or new construction spaces under current market conditions, in order to establish a relative baseline; and 3) identify the standard practices toward improved quality and efficiency in the market. Additional market indicators will be the number of lighting product manufacturers, real estate management, property management, and owner-occupied firms that adopt the lighting *knowhow™ Series*, and the amount of square footage affected.

More specifically, in the near-term DLC will look at the following as possible market indicators:

- What is being sold/distributed now, and whether or not the *knowhow™ Series* have made an impact;
- Availability of high-quality, energy-efficient lighting system products in the market today versus a future date;
- Changes in selection, specification, design and installation of commercial lighting by electrical contractors and other relevant market players;

- Utilization level of the *knowhow™ Series* in practice as compared to the lighting market as a whole;
- Changes in customer attitude about high-quality, energy-efficient lighting, in particular, the perception of a properly designed lighting system contributing to better work-place performance;
- Percent increase of customers who participate with the market players who use the *knowhow™ Series* and who decide to select/purchase/install high-quality, energy-efficient lighting since the formation of DLC;
- Percentages of market players influencing high-quality energy-efficient lighting design before and after introduction to the *knowhow™ Series*;
- Shifts/changes in the way purchasing and behavioral decisions are made regarding design, specification, selection and installation of lighting systems;
- Percent change in prices of high-quality, energy-efficient lighting products/systems now and a few years later; and
- Increase in market share of high-quality, energy-efficient lighting product/systems now and a few years later.

Other key long-term market indicators will be: regional market share, price differentials between products/services, lighting manufacturer's representation of high-quality, energy-efficient lighting design on product specification sheets, adoption of revised lighting codes incorporated into design practices, firms with changed policies, lighting power density of remodeled space in the service territories of participating utilities, changes in stocking practices and product availability.

Lessons Learned from DLC perspective

The Final Report on the Program Year 1999 training seminar activities identified a number of recommendations based on lessons learned that when incorporated, will make Program Year 2000 even more successful. Those recommendations are grouped into four categories: Seminar Format, Marketing, Association and Industry Participation, and Content of the lighting *knowhow™ Series.*

Seminar Format

The seminars must remain flexible to allow for modification to meet specific audience needs. The technical competency of the audience can vary greatly. In response to this need, additional slides and onsite technical resources will be included in the training seminars for 2000. The Seminar Format will be modified to include the addition of testimonials from past seminar attendees, and building owners and occupants. Testimonials will help to show the contractor's customers that the designs are tested, proven and cost-effective options.

Marketing

Marketing is one of the most critical elements leading to the success of the seminars. Careful attention to detail for the marketing plan is one element, timing is another. A major complaint from attendees, and those that assisted in promoting the seminars, is that there was not enough time to properly publicize the training seminars or for contractors to fit the

seminars into their busy schedules. Care will be given in 2000 to allow at least six weeks notice prior to a seminar being conducted.

Association and Industry Participation

DLC will seek to better leverage industry associations and key industry players in 2000. A recommendation or endorsement of the training seminars by key industry leaders or associations will assist in marketing the seminars and also in providing recognition as a credible technical and training resource.

Content of the lighting *knowhow™ Series*

Although the lighting *knowhow™ Series* provides a great deal of information for the contractors and end users, there are certain content elements that could be added or expanded upon to enhance their utilization. Additional information such as testimonials, cost savings information and more technical information could be added. DLC plans to develop new lighting *knowhow™ Series* guidelines, targeted at the different market players.

Transition Strategy

DLC is a market-oriented initiative, focusing more on the practices of the market players rather than the technologies related to commercial lighting. Measuring the overall success of the initiative will be based on its ability to establish quantifiable market-based indicators that define whether or not long-term goals have been achieved. Beyond the year 2002, the elements of sustainability that will underlie the success of DLC in changing the market will include a major awareness campaign to educate the many different market players involved in the commercial lighting market, including building owners and managers, about high-quality, energy-efficient lighting design.

Building market awareness for high-quality, energy-efficient lighting design is the cornerstone of sustainability. The approach to building market awareness will involve selling market players on the value of quality lighting for each commercial building space type (e.g., lighting *knowhow™ Series* and companion case studies) and defining what quality lighting is. By building market awareness, DLC will be able to influence specifications for commercial building remodels and new construction activities. To meet the demands of the decision-makers and specifiers, there will be an increased need to train the market players on high-quality, energy-efficient lighting design, specification, selection and installation practices. As the market becomes more aware of the benefits of high-quality, energy-efficient lighting, the need to train market players will continue to grow.

Creating market awareness includes building alliances and developing partnerships with market players involved in the targeted commercial building sectors. Understanding the decision-making process and how to influence the process, as it relates to purchase decisions for lighting and the establishment of specifications for commercial buildings, is imperative to sustaining change in the market. Ultimately, the challenge is to create a demand for high-quality, energy-efficient lighting design practices (and indirectly more energy-efficient type products) to get business and industry (i.e., lighting manufacturers and electrical distributors) involved in changing the market permanently.

How DLC can be applied to other regions

High-quality, energy-efficient design or "Lighting Design" is not just a northeast phenomenon; it can be applied to other regions as well. The principles of lighting design—increased visual comfort, increased productivity, decreased electrical costs, etc.—are applicable throughout the country. The experience of the DLC can greatly aid in transforming the lighting market throughout the country and the world.

One place where the lessons learned from the DLC are currently being applied is in New York State. The New York State Energy Research Development Authority (NYSERDA) is working to transform the New York small commercial lighting market to incorporate more lighting design options. The DLC *knowhow™ Series* and training materials are greatly influencing how the NYSERDA program is being developed.

Electric utilities across the country are also prime candidates to get involved in the lighting design efforts. From a utility perspective, high-quality, energy-efficient lighting can be used to provide customers with not only lighting solutions that reduce energy, but—more importantly—a potential sales advantage compared to other similar stores, or a benefit in employee productivity. Through lighting design initiatives, utilities can become not only a supplier or distributor of electricity, but also a partner in helping commercial customers increase revenues, reduce costs, and increase employee and customer satisfaction.

Conclusion

It is anticipated that the energy savings opportunities for this new era of commercial lighting will not be as significant as previously measured lighting installation for a specific market segment. Rather, an opportunity to quantify the benefits and attributes of lighting systems that are designed and installed with a focus on quality, will be the new level of performance criteria that will be measured, in parallel with the energy savings.

Looking beyond the year 2000, it will be imperative that DLC continue to deliver tools to the marketplace that can build upon the current *knowhow™ Series*, *knowhow™ Training* and *knowhow™ Case Studies.* Interviewing past recipients of both the guides and the training will help DLC to evaluate changes that are needed to address the concerns and needs of the many different market players involved in the commercial lighting market. Success will only come about when we have educated the necessary market players to affect how these players specify, select, design and install lighting systems.

References

Easton Consultants. 1997. "New England C&I Lighting Market Transformation Baseline Study."

Gordon, Fred, Les Tumidaj, and Sue Coakley. 1995. "Opportunities for Market Transformation for Commercial Lighting Remodeling: Summary of Workshop Findings."