Utility Lighting Programs in the USA — A Look Toward the Future

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ABSTRACT

THE UTILITY INDUSTRY IN THE United States (U.S.) is preparing for the arrival of an increasingly competitive, deregulated marketplace. Most U.S. utility companies have already begun reorganizing to adapt to this new business environment and many are reevaluating their needs for demand-side management (DSM), which has been a major factor in sales of new lighting technologies. Many utilities are tailoring their customer programs in new ways to provide services of increased customer value in the emerging competitive environment.

This paper reviews the recent DSM history and energy policy changes in the U.S. with a brief look at some European activities affecting electric power generation, transmission, distribution, and sales, and discusses the likely impacts of these changes on utility business and lighting DSM programs. It examines current traditional and innovative lighting programs and shows that refocused lighting activities can still form the basis of key utility customer service programs. Descriptions of example programs and results of utility and non-utility DSM studies are used to illustrate the characteristics and potential impacts of emerging lighting DSM trends. The paper concludes by discussing the impact of utility industry DSM changes on the overall U.S. lighting industry.

TRENDS IN LIGHTING DSM

Since the early 1980s, U.S. utility demand-side management (DSM) programs have greatly influenced the development and use of energy-efficient lighting technologies. By helping to develop lighting information programs, technical services, and incentives, DSM programs have influenced the electricity market to produce better products and broaden customer awareness of product benefits. Equally important, lighting DSM programs have helped the utility industry to defer construction of new facilities, meet environmental goals, and in some states, to benefit financially.

Now, as the electricity market prepares for deregulation, utility lighting programs are changing. To examine these changes, the American Council for an Energy-Efficient Economy (ACEEE) recently published a survey of leading programs to identify recent and projected changes in DSM resources [1)].

ACEEE's general findings, combined with examples of recent utility lighting programs, illustrate important transformations in current lighting DSM programs. According to the ACEEE study, many utility lighting programs will change over the next few years, becoming more cost-effective and service-oriented. The utilities in the study, which have aggressively implemented DSM programs over the years, are likely to remain interested in DSM–primarily to preserve their customer base. By offering valuable programs–including lighting–utilities will be better equipped to retain their customers in the new competitive environment. Programs are expected to emphasize services such as equipment leasing, economic assistance via shared savings programs, and creative energy pricing. Other utilities note that they will continue their DSM programs to employ their least-cost portfolio of resources and to defer transmission and distribution (T&D) expenditures. The ACEEE study also found that outdoor lighting will see increased interest for its off-peak load building effects, but rebates and direct equipment installations are expected to decrease.

European lighting programs have evolved as well, expanding into technology development and procurement. For example, lighting leasing programs are underway in Hamburg and Stockholm. Further, the European Buying Group, consisting of electric utilities and end-users, aims to promote development of a replacement for the standard 60-W incandescent lamp. Orders of nine million lamps are at stake.

DEREGULATION AND THE LIGHTING INDUSTRY

As utilities restructure their services in preparation for deregulation, some may eliminate their traditional DSM-type rebate programs, but many are expected to continue or expand their service to customers. These new programs will be based on more of a business relationship to address specific concerns of each customer. In establishing these programs, utilities are expected to seek lighting professionals to leverage industry expertise and minimize staffing costs. Because virtually every utility customer has lighting, and upgrading their lighting reaps tangible results, many customers are interested in lighting improvements, and often request utility assistance. Thus, to meet this demand, utilities will likely continue providing lighting services, focusing on providing expert lighting advice and services to compete effectively in the new business environment. But what kinds of lighting services will utilities be providing customers in a deregulated environment? And how will the lighting industry fit into the picture?

Though much is unclear and many questions remain unanswered, one thing seems certain: Utilities will have a hard time meeting the growing demand for energy services using only in-house or subsidiary energy service companies (ESCOs). Therefore, as utilities develop comprehensive lighting programs, they will probably turn to the lighting industry to actually provide these services. As a result, lighting professionals may find success in building and solidifying relationships with local utilities now. Most likely, utilities will value input from experienced professionals who are familiar with common lighting problems and solutions.

For example, Southern California Edison Company, which reduced customer rebates for lighting products, now offers a financing program called ENvest. ENvest provides customers with energy efficiency packages of equipment, including lighting, support services, financing, and warranties. Southern California Edison has forged partnerships with vendors, contractors, and energy service companies to fulfill the needs of ENvest program participants [2].

And Salt River Project, which recently discontinued the lighting rebates it had offered for years, is still providing its Lighting Edge information program. In conjunction with the Illuminating Engineering Society and the Arizona Lighting Council, the program helps customers make money-saving decisions about lighting retrofits or energy efficiency lighting recommendations for new construction [3].

As utilities strive to cope effectively with market changes, they know that customers will continue to demand expert advice and opinions about new products and technologies. Utilities seeking a competitive edge will continue to develop and disseminate information about the rapid developments in lighting technologies. Utilities rely on lighting manufacturers and industry groups to help them educate new users of these advanced technologies.

Some utilities will contract with skilled, experienced staff lighting designers, while other utilities will hire independent ESCOs. Some may even form their own ESCOs. Baltimore Gas & Electric, for example, has an ESCO subsidiary, BGE Energy Projects and Service. A recent national survey of 120 ESCOs found more than 50 ESCOs were utility affiliates.

UPDATE ON THE REGULATORY OUTLOOK

Many U.S. states that are now pursuing deregulation hope to lower customer costs and provide improved services. Leading this movement are California, Massachusetts, New Hampshire, and New York. These states recently decided to implement complete statewide deregulation for all their customers, beginning January 1998. All four states are expected to see dramatic market changes, including lower prices, expanded customer services, and a flood of new competitors. Eager to benefit from this new market, competitors will probably include utilities from all over the country, as well as independent power producers and companies that market power generated by other firms.

These states and their utilities will have an opportunity to shape their customer programs and energy efficiency efforts. California, for example, is establishing a Public Interest Energy Research Program which will allocate some $500 million through Centers of Excellence. This money will be collected by the electricity providers. The Centers will address five major areas: renewable energy sources, end-use efficiency, environmentally preferred advanced generation, environmental issues, and strategic research.

As these states and others prepare for deregulation, there is the growing possibility that major decisions will soon be taken at the federal level. Given the complexity of the issues–and the confusion sown by the state-by-state approach–some are calling for national restructuring. Congress is currently considering three bills that each take a different approach to deregulation. One bill calls for national deregulation by December 2000, while another strives for deregulation by 2004. The third bill, which is supported by the Clinton Administration, favors a hands-off approach that would leave deregulation in the hands of the states [4]. However, Congress has made slow progress on the issue, and it seems likely that they will not pass a law this year.

THE UTILITY RESPONSE: CHANGING ALLIANCES, CHANGING SERVICES

Across the country, even in states in the early stages of planning for deregulation, utilities are positioning themselves for change. For example, since 1995, gas and electric utilities have announced at least 13 mergers, representing revenues in excess of $50 billion. Some of the mergers have been between electricity providers, but the prevailing trend is to join electric and natural gas utilities, creating “energy general stores [5].” The most dramatic of these mergers to date is the $7.7 billion purchase of PanEnergy, a major natural-gas pipeline concern, by Duke Power, one of the largest U.S. electric utilities.

With these electric-gas mergers, electric utilities are forming a new role for themselves in the energy market. Instead of merely selling electricity, they are preparing to become energy service providers. Example services include comprehensive lighting, water heating, or space conditioning services. Utilities will then offer these deals at reasonable fees, and customers will receive what they need without conducting energy audits, making equipment decisions, or maintaining and operating equipment. Utilities are hoping that these valued services will aid in customer retention, and help create strong ties with their customers that other energy suppliers will find difficult to duplicate.

Utilities are already experimenting with a variety of programs. For years, San Diego Gas & Electric has offered turnkey lighting services that include project identification, contractor selection, project management, commissioning, and financing. Consolidated Edison of New York is also planning to offer comprehensive lighting services, in partnership with specific lighting vendors.

Other utilities are preparing for deregulation in another way, offering one-stop shopping to national accounts. Duke Power will supply selected United Parcel Service facilities on the West Coast and in New England with supply- and demand-side services for two years. And UtiliCorp has signed a deal to provide 700 Applebee's restaurants in 45 states and 67 Ground Round Restaurants in 22 states with natural gas now and with electricity in the future. Such one-stop shopping will greatly simplify billing for these large, national organizations, allowing utilities to increase the value of their services.

In the midst of these changes, territorial boundaries are vanishing rapidly. Southern Energy Inc., a subsidiary of Southern Company, recently announced plans to sell energy services in New England through an alliance with Providence Gas Co. of Rhode Island. Providence Southern Energy customers will be able to choose from a menu of services–such as gas for a furnace and electricity for a kitchen range–and pay conveniently from a single bill. [6)]

National boundaries are fading, too. Southern Co., which already owns electric power plants in China and the Philippines, has acquired an 80% interest in Consolidated Electric Power Asia, the largest independent power producer in Asia. And Ontario Hydro of Canada has created a U.S. subsidiary, aiming to sell power throughout North America.

Utilities and energy providers are working hard to create effective, creative marketing strategies. Enron Corp. of Houston, which has a $3.2 billion merger pending with Portland General Corp. in Oregon, staged an industry first by buying commercial time during the 1997 Super Bowl to show how it was saving money for New Hampshire power customers. [7)] Others are forming unregulated utility subsidiaries with new brand names. Public Service Electric & Gas Co. of Newark, New Jersey, for example, announced the formation of Energis Resources. This new company would sell power, gas, and energy services from other utilities to commercial customers as power is deregulated from Maine to Maryland [8)].

Although deregulation is expected to profoundly change our current electricity market, lighting contractors, designers, and vendors have reason to welcome this market change, which will put them in great demand. As utilities strive to become energy service marketers, they will turn to lighting professionals for assistance. Lighting firms that begin networking with utilities today can ensure their role in the movement to create lighting packages that make customer homes and workplaces more energy-efficient, cost-effective, convenient, and comfortable. ●

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