



ENVIRONMENTAL AND ECONOMIC RESEARCH AND DEVELOPMENT PROGRAM

Shedding Light on the Commercial Lighting Market in Wisconsin

Executive Summary August 2013

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EXECUTIVE SUMMARY

Lighting is one of the most substantial energy consuming end-uses and non-residential lighting is a major contributor to the energy savings achieved by the Wisconsin Focus on Energy program. Lighting alone accounted for 43% of the demand and 38% of the energy saved by Focus on Energy business programs in 2010 and 2011, making it the single largest end-use contributor to overall C&I program energy savings.¹

At the same time the lighting market is in a state of transformation. This creates uncertainty for many energy efficiency programs, which often rely heavily on technology replacement for a large portion of energy savings. Commercial lighting will continue to be a key driver for the savings as new technologies and strategies begin to make gains in market share.

Understanding the dynamics of this changing market is critical for Focus on Energy to achieve future program goals. For instance, one of the staples of energy efficiency programs -linear fluorescent lighting- has grown increasingly efficient in recent years, and new lighting systems, such as light-emitting diodes (LEDs), are beginning to encroach on fluorescent's territory.

The following research is intended to provide Focus on Energy staff with deeper insight into the current state of the Wisconsin non-residential lighting market, as well as a glimpse into how experts perceive the industry will look in five years. In short, experts believe that we are on the precipice of tectonic shifts in the products sold and installed now versus the near future.

1.1 KEY FINDINGS

Below we provide a summary of the key findings from this study. Results are based on two rounds of Delphi panel² surveys with lighting industry experts in Wisconsin.

LED appears likely to overtake fluorescent as the most frequently installed technology in the next five years. When panelists were asked what they install most today and what they expect to install five years from now, the results were dramatic. At present, the majority install linear fluorescent fixtures far more than other technologies. No panelist currently installs LEDs more frequently than fluorescents, but they have all worked with LEDs in the last year. The majority of panelists believe that in five years they will install LEDs **more** frequently than fluorescent. This suggests a rapid change in the applications for which LEDs are used since at present; LED are generally reserved for niche applications, such as case lighting or signage, and are not competing with linear fluorescent in ambient lighting situations. New products that make use of LEDs for ambient lighting will need rapid acceptance for this prediction to happen.

¹ This was calculated by using data provided to Opinion Dynamics by the program administrator for the 2010 and 2011 program years.

² A Delphi panel consists of a panel of experts that provide their opinions on a topic. The results are then aggregated and presented back to the group. The experts then refine their opinions based on the group feedback.

Panelists expect LED to become cost-competitive with linear fluorescent in 2015. Cost is an important consideration for customers. Based on current trends in price, panelists agreed that LEDs will achieve cost parity with linear fluorescent in 2015. This argument is bolstered by a McKinsey study that predicted LEDs saturation in general lighting will reach 45% in 2016 and nearly 70% in 2020.³

Restaurants and the Outdoor market segment appear to have the biggest challenges with respect to adopting efficient lighting. There was some consensus that Restaurants and Outdoor lighting are the least transformed of all of the markets covered in our research. Our panelists noted that those markets each have specific barriers that need to be addressed making them less receptive to upgrading lighting systems.

Additional research should be conducted to examine the outdoor lighting market in more detail. The outdoor segment presents different challenges from other sectors but panelists overwhelmingly believe that, overall, the outdoor segment represents potentially the greatest area of savings, between traffic lights, street and parking lighting, and signage. Panelists believe that, as outdoor projects tend to be expensive to begin with, the added cost of efficient lighting can be critical; especially since large fixture LEDs are especially costly and hard to source, compared to traditional lighting fixtures and lamps. Additionally, outdoor components of larger projects are often overlooked, and opportunities are missed. Focus on Energy may want to consider some additional research examining barriers within facility types to determine how the program can better address the unique needs of this market.

There are significant savings in the design/redesign market. Our panel reported working primarily on design projects and reported that only 25% of their projects represent one-to-one replacement. These findings align with the 2010 potential study and indicate significant program savings may be achieved through design. Panelists report designing above code in about 70% of projects requiring design. At the same time, they report only receiving incentives for 36% of those above code projects. This could be the result of “value engineering” where changes and substitutions are made during project implementation cause the final system to be less efficient than the original design or this could possibly indicate non-participant spillover. Additional research, focused specifically on design, could examine the course of a project from design through implementation to find out if that is indeed the case or if there are other barriers to these projects.

³ “Lighting the way: Perspectives on the Global Lighting Market” by McKinsey and Company (2011).

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