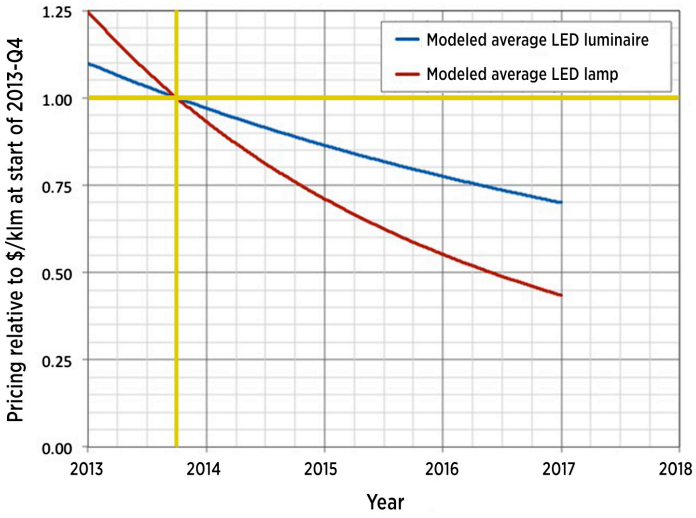
REPORT SUMMARY:

SSL Pricing and Efficacy Trend Analysis for Utility Program Planning

Today, an LED lamp or luminaire can generally be found that matches or exceeds the efficacy of benchmark technologies in a given product category, and LED lighting products continue to expand into ever-higher lumen output niches. However, the price premium for LED lighting continues to pose a barrier to adoption in many applications, in spite of expected savings from reduced energy use and maintenance. And other factors —such as dimmability and quality of light—can also present challenges.

Utilities and energy efficiency organizations have asked the U.S. Department of Energy (DOE) for information on LED lighting product performance and pricing trends, to help them forecast the order in which important SSL product applications will become cost-effective, and to estimate when each "tipping point" will be reached, looking ahead two to three years.

As a first step toward addressing these needs, DOE has published the report *SSL Pricing and Efficacy Trend Analysis for Utility Program Planning*, which includes performance trend analysis from DOE's LED Lighting Facts® and CALiPER programs, plus cost analysis from various sources. Application-specific projections provide time for planning, enable prioritization by application or product category, inform delivery and education approaches, and allow estimation of energy savings potential and appropriate incentive levels to overcome price barriers.



Projected pricing for LED luminaires and LED lamps, relative to pricing at the start of the fourth quarter of 2013

(Based on data from CALiPER and Seattle City Light)

Among the key findings from the analysis:

- Average efficacy for LED lamps and LED luminaires is projected to remain well below L Prize® and DOE SSL R&D Multi-Year Program Plan thresholds through 2017, but given the high variability among products and the performance potential of new color-mixing technologies, these goals might soon be met by leading products.
- In several key LED product categories (omnidirectional lamps, decorative lamps, downlight luminaires, and troffer luminaires), projected efficacies based on LED Lighting Facts listings are substantially higher than projections based on the corresponding ENERGY STAR® or DesignLights Consortium® listings.
- Comparison of historical data compiled by CALiPER and Seattle City Light indicates that two distinct normalized curves—one for LED lamps and one for LED luminaires—can be used to make projections from current pricing (in terms of dollars per thousand lumens, or $/klm) for a given product category.
- LED lamp $/klm pricing is expected to decrease roughly 55 percent by 2017, relative to current pricing. A more modest decrease of 30 percent is projected for LED luminaires over this same period.

This report is intended to serve as a starting point—to be updated, detailed, and expanded in subsequent reports as appropriate, based on input from utilities and energy efficiency organizations.

For More Information

For more information or to download full reports, see ssl.energy.gov/tech_reports.html.

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