



LED Market Update:

LEDs Continue to Gain Market Share, Biden Administration Exploring Options for EISA Backstop

August 26, 2021

Introduction

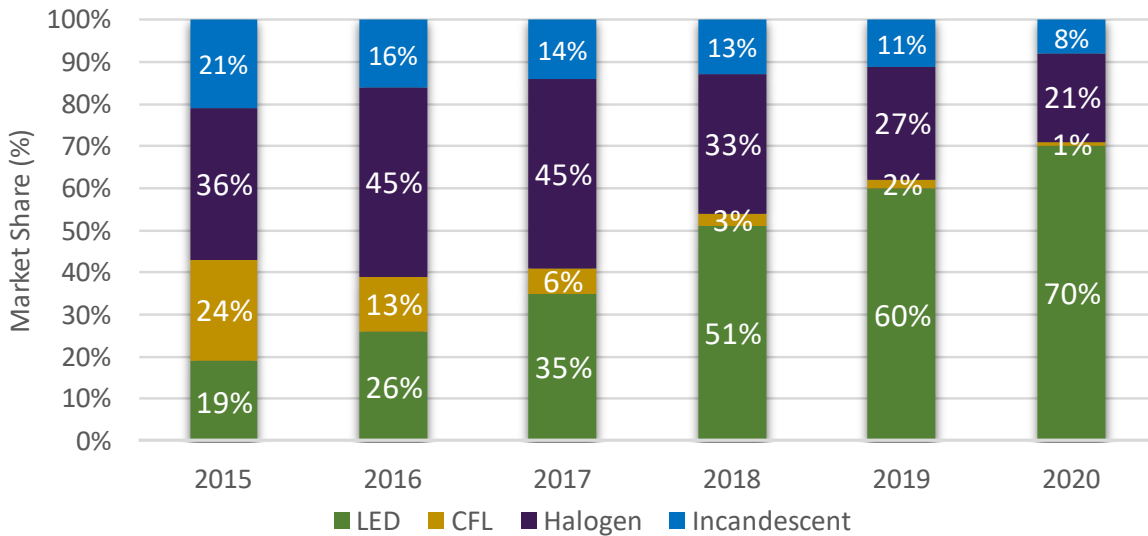
Despite the pandemic, LEDs continued to gain market share, particularly for specialty styles, plus LEDs represent the majority of bulbs on shelves, even in regions that have never offered incentives. In addition, recent actions by the Department of Energy (DOE) signal that the Biden administration is exploring options regarding the EISA backstop. We are currently assembling the 2021 sales data, so please contact us with any questions.

Lighting Market Update

The Consortium for Retail Energy Efficiency Data (CREED) LightTracker recently completed analysis of 2020 data, with some of the key highlights presented below.

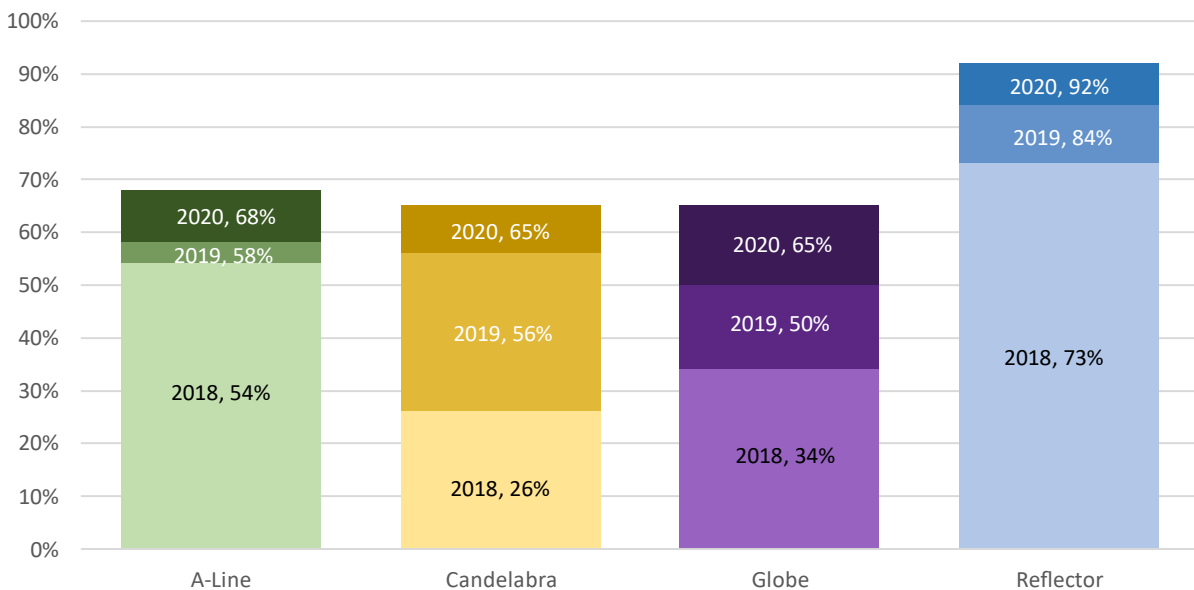
Overall U.S. Sales: LED market share continued to grow in 2020, reaching 70% across all retail channels and lamp styles (Figure 1). Once again, the growth in LED share came at the expense of halogen and incandescent lamps. In prior years, growth in LED share had primarily come at the expense of CFLs, but CFLs now only represent about 1% of retail sales

Figure 1: Total U.S. Market Share by Lamp Type and Year

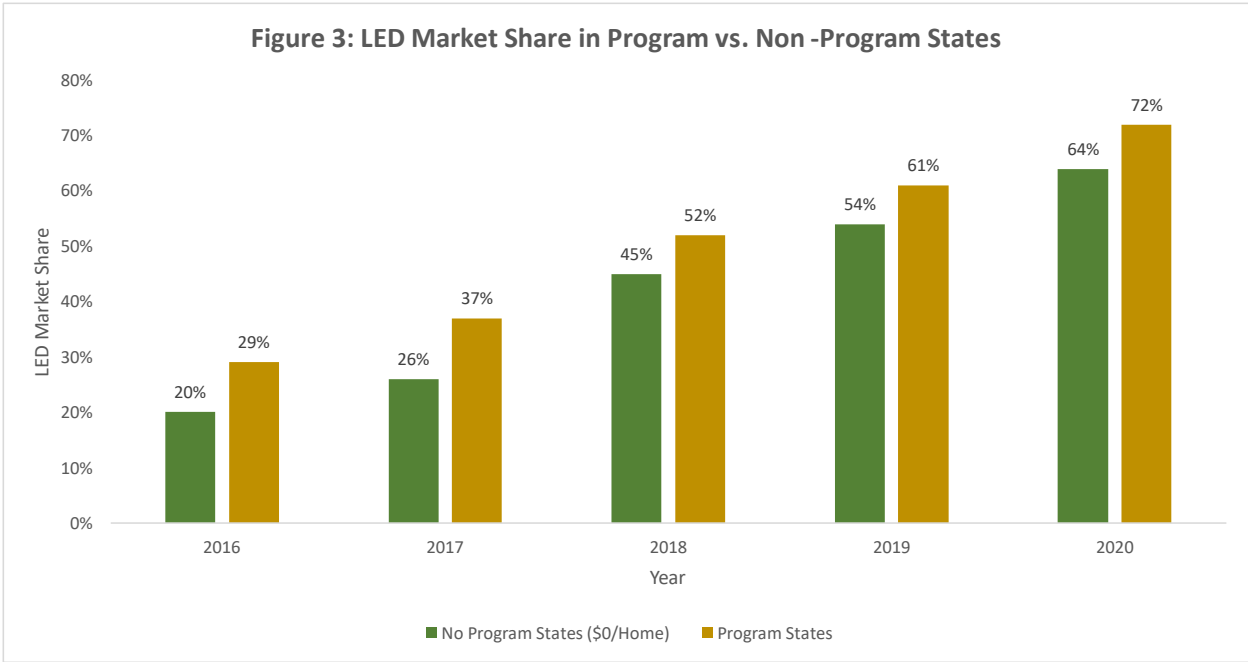


LED Market Share by Style: LEDs continued to dominate sales of reflectors, reaching 92% market share in 2020 (Figure 2). LED sales among candelabra and globe styles were also strong in 2020, and LED share for these styles now only slightly trails the A-lines.

Figure 2: 2020 U.S. LED Market Share of A-Line and Specialty Lamps

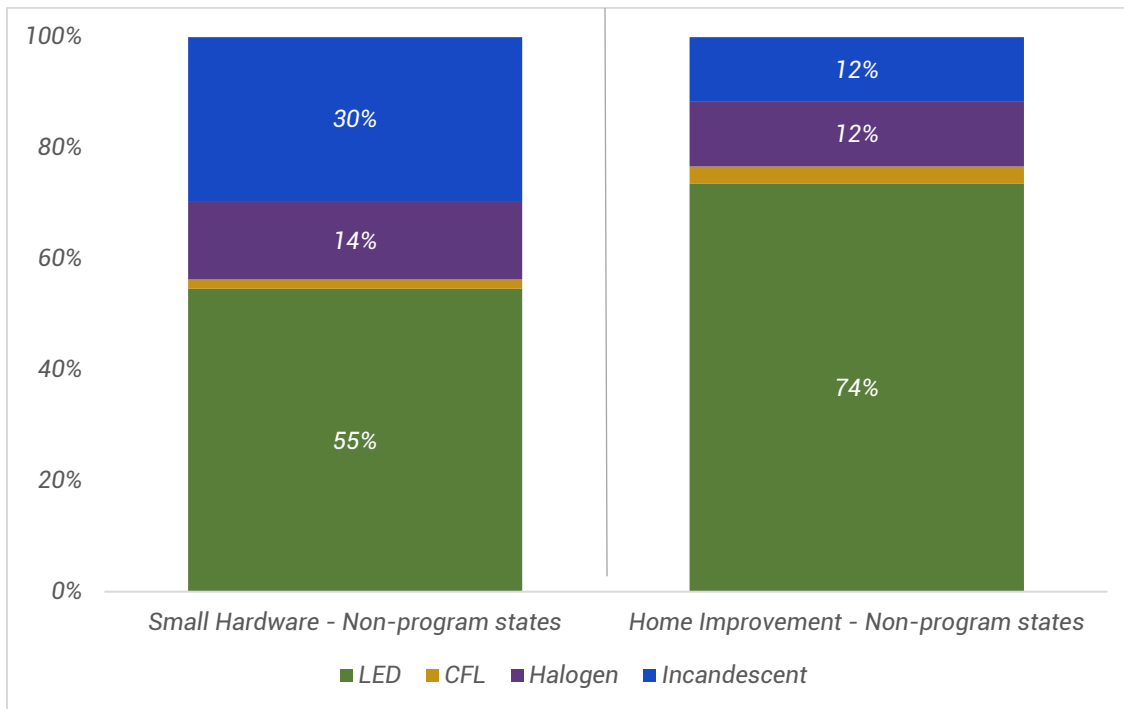


Program vs. Non-Program Areas: LED market share in states with lighting program activity continued to out-pace market share in states without lighting program activity in 2020 (Figure 3). However, relative difference between program and non-program states is substantially smaller from prior years since LEDs now make up 64% of retail lighting sales in non-program states.



LED Availability: New for 2020, CREED LightTracker conducted a shelf-stocking study in four non-program states, including Alabama, Tennessee, Nebraska, and Florida (excluding Jacksonville). Researchers visited 32 stores (eight per state), focused on small hardware and large home improvement stores). As shown below in Figure 4, LEDs make up the majority of estimated shelf-stocking space in non-program states for both retail channel types, with the highest shares in home improvement stores (74%).

Figure 4: Shelf Stocking Shares and Technology by Retail Channel



EISA Update: Recent Developments Regarding EISA Under the Biden Administration

President Biden issued an executive order on his first day in office (January 20, 2021) directing heads of federal agencies to review existing regulations, orders, and other policies that conflict with efforts to address climate change. In response, the DOE identified 13 specific actions, including both of the 2019 final EISA rules. On March 5, 2021, DOE and the litigants in the lawsuit agreed to a 60-day abeyance, putting the proceedings on hold to give DOE time to review the rules and determine its next steps. The abeyance was extended on June 1, 2021.

DOE (under the Biden administration) also released a semi-annual regulatory agenda on March 31, 2021 with Energy Conservation Standards for General Service Lamps as the first item. The agenda states that “DOE will issue a Supplemental Notice of Proposed Rulemaking (NOPR) that includes a proposed determination with respect to whether to amend or adopt standards for general service light-emitting diode (LED)

lamps and that may include a proposed determination with respect to whether to amend or adopt standards for compact fluorescent lamps.”

On May 20, 2021, DOE issued a Request for Information (RFI) regarding the EISA backstop provision. In particular, DOE requested information on availability of lamps (those both defined as GSLs and those not defined as GSLs, according to EISA), market share for these lamps, ability to create lamps that meet the 45 lm/W requirement, sell through periods for existing stock, and expectations around potential stranded inventory.

On August 9, 2021, DOE took additional action by issuing a Notice of Proposed Rulemaking (NOPR) that expands the GSL definition to include most specialty styles (e.g., globes, candelabras, and reflectors) that were initially exempt from EISA, but included by DOE under the Obama administration.

The agenda item, RFI, and NOPR regarding the GSL definition imply that the Biden administration plans to take additional action on GSL standards in the next six months. Although the exact timing of a NOPR to reinstate the backstop is unclear, a final rule could follow the Supplemental NOPR relatively quickly; roughly seven months passed between the Trump DOE’s NOPR on the expanded definition of GSLs and the final rule, and there were less than four months between the NOPR and the final rule rescinding the backstop. It is not yet clear how this proposed rulemaking might interact with the EISA standards, which the Trump administration defined narrowly as applying only to incandescent lamps in their justification for rescinding the EISA backstop.

Lighting manufacturers, through the National Electrical Manufacturer Association (NEMA) trade group, are likely to oppose any action DOE takes to restore the expanded GSL definition or the 45 lm/W backstop, and are preparing to do so. For example, the light bulb manufacturing industry could pursue legal challenges to any rules DOE (under the Biden administration) made without a decision from the court invalidating the Trump administration’s previous actions. As part of those legal challenges, manufacturers could seek an injunction to prevent DOE from implementing revised rules while the lawsuit was decided.

Summarizing, it appears likely that the Biden administration will take action before the end of 2021 to restore the Obama-era lighting standards, including both the expanded GSL definition as well as the 45 lm/W efficiency standard. There is uncertainty, however, as to the length of time DOE will allow between adoption of the standards and the time it begins enforcing compliance. Lightbulb manufacturers will likely argue a period of years is necessary, while efficiency advocates believe six months would be generous. A 12-month sell-through period would represent a compromise between the matter of months efficiency advocates support and the years lightbulb manufacturers will likely seek, recognizing that the Biden administration appears motivated to restore these standards. The standards could also take years to take effect, however, if the DOE pursues new rulemaking and NEMA pursues litigation and wins an injunction against the DOE.

With all of this uncertainty in mind, it appears reasonable to assume that the expanded GSL definition and 45 lm/W efficiency standard will be in effect by sometime in 2023. This means there is possibly only one to two additional years remaining for upstream lighting programs to impact the market for LEDs. Given the difficulty of restarting a program once it's been ended, we recommend planning for lighting programs to continue through at least the end of 2022, but being prepared to terminate the program should the EISA backstop be reinstated.

Sources

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Implications for Lighting Programs

Given the continuing uncertainty in the lighting market, we continue to recommend that program administrators plan to offer retail lighting programs, but closely monitor the market and be prepared to end the programs should the backstop be reinstated. In the last few years we have seen multiple examples of states that have ended lighting

programs or cut incentives for selected styles, only to see backsliding in LED sales. In addition, there remains no residential measures to replace the magnitude or cost-effectiveness (even with a low net-to-gross ratio) of lighting.

However, as we have noted the last two years, future programs should assume the following:

- **Lower Net-To-Gross (NTG):** There is clearly strong naturally occurring market adoption of LEDs, so states that use NTG ratios would need to apply decreasing NTG ratios. The sales data, however, do indicate higher potential influence in selected styles (e.g., focusing on A-lines, globes, and candelabras, and dropping reflectors) and by channel (e.g., trying to focus on grocery, drug, dollar, and discount channels).
- **Volume sales will decrease:** The increasing saturation and longer lifetime of LEDs means that fewer sockets will turn over naturally, leading to lower year-over-year sales. Even direct installation programs will find less sockets in a home that contain inefficient lamps.
- **Reduced measure lifetime:** Although the technical life of an ENERGY STAR LED is 15,000 hours (approximately 15 years), the lifetime used to estimate program impacts needs to be significantly reduced to recognize the likelihood that the socket filled by a program lamp would have had an LED installed anyway within a few years even in absence of the program.

About CREED

In order to solve a problem plaguing the energy efficiency industry for many years, in 2012 Apex Analytics created the Consortium for Retail Energy Efficiency Data (CREED). CREED serves as a consortium of program administrators, retailers, and manufacturers working together to collect the necessary data to better plan and evaluate energy efficiency programs. LightTracker is the first initiative of CREED, focusing on acquiring full-category lighting data, including incandescent, halogen, CFL, and LED bulb types, for all distribution channels and for the entire U.S. As a consortium, CREED speaks as one voice for the program administrators nationwide when requesting, collecting and reporting on the sales data needed by the energy efficiency community. Over the last five years CREED LightTracker, has become

the de facto source for residential lighting sales reporting and is used by utilities from California to Massachusetts.

Beginning in 2021, CREED is turning it's attention to transportation electrification, assembling various sources of data to provide the utility industry with a convenient way to monitor EV populations and growth within their service territories. Similar to the work for LightTracker, CREED combines data and analytics from both private and public sources of information into a new business intelligence program called CREED EV Tracker.

For more detailed analysis and recommendations targeted to your service area and program needs, contact Scott Dimetrosky at (303) 590-9888 x101, or email scott@apexanalyticsllc.com.