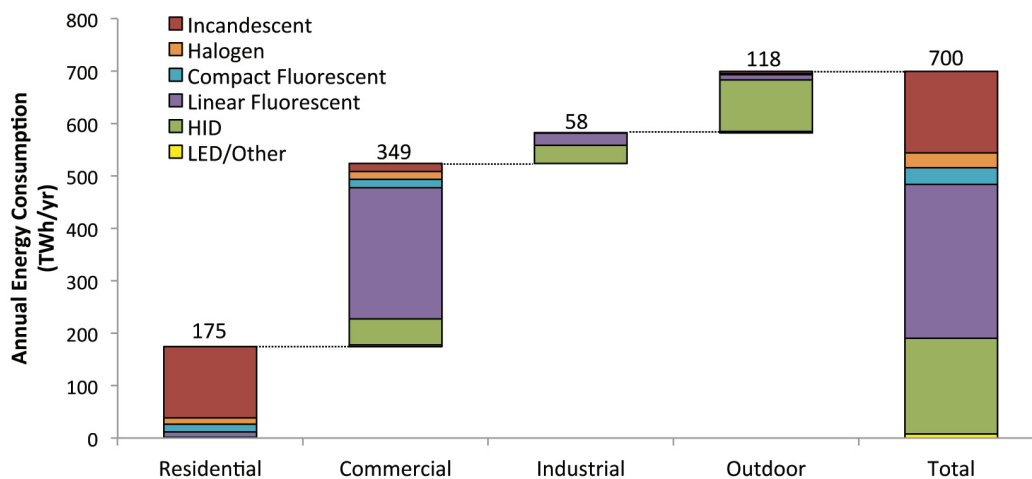


2010 U.S. Lighting Market Characterization

The overarching goal of the Department of Energy's (DOE) Solid-State Lighting program is to assist in the market transition to more energy-efficient white-light source technologies. In order to accurately chart progress made toward this goal, the current characteristics of the lighting market must be well understood. DOE's *2010 U.S. Lighting Market Characterization* (LMC) provides this information through comprehensive and detailed estimates of the national inventory of installed lamps, their performance characteristics, associated energy use, and lumen production. National lighting characteristics were developed for four sectors: residential buildings, commercial buildings, industrial buildings, and outdoor. The estimates provided in the LMC report were developed via building lighting audit data, industry surveys, national lamp shipment data, and interviews with lighting professionals and subject matter experts.

It was found that in 2010 lighting accounted for approximately 700 terawatt-hours (TWh), or roughly 19 percent of total U.S. electricity use. As shown in the graph below, nearly half of the energy use resides in the commercial sector, which produced the majority of lumens. This sector is dominated by fluorescent lighting used for an average of 11 hours per day. The residential sector contains by far the most installed lamps with nearly six billion installations, over half of which contain incandescent lamps. However, due to the relatively low operating hours of these lamps, the residential sector is only the second largest lighting energy consumer, at 175 TWh per year.

National Lighting Energy Use by Technology and Sector in 2010



NOTABLE TRENDS

All estimates provided in the current report are representative of the U.S. market in the year 2010. This report is an update to the previous LMC, which modeled the 2001 U.S. lighting market inventory. During the last decade, two notable high-level trends have occurred:

- **Increased demand for light.** The total number of lamps installed in U.S. stationary applications grew from just under seven billion in 2001 to over eight billion in 2010. The vast majority of the growth occurred in the

residential sector, primarily due to the increase in number of households and the rise in the number of sockets per household, from 43 in 2001 to 51 in 2010.

- **Push towards higher-efficacy lighting.** Investment in more energy-efficient technologies, federal and state lighting regulations, and public awareness campaigns have been effective in shifting the market toward more energy-efficient lighting technologies. Across all sectors the lighting stock has become more efficient, with the average system efficacy of installed lighting increasing from 45 lumens per watt in 2001 to 58 lumens per watt in 2010. This rise in efficacy is largely due to two major technology shifts: the move from incandescent to compact fluorescent lamps (CFLs) in the residential sector, and the move from T12 to T8 and T5 fluorescent lamps in the commercial and industrial sectors.

The full report with more detailed results can be downloaded at www.ssl.energy.gov/tech_reports.html.

To learn more about DOE Solid-State Lighting program activities, visit www.ssl.energy.gov.