



State Appliance Efficiency Standards Focus on: High-CRI tube lighting

Current federal energy efficiency standards for general service fluorescent lamps exempt tubes with high “color rendering index” or CRI. High-CRI fluorescent tubes used to be rare and expensive, but now major manufacturers sell millions of them annually at low prices. These tubes waste energy, increase customers’ electricity bills, and are a major loophole in the federal standard.

Appliance standards are the best energy policy you’ve never heard of

Many of the products in our homes and businesses are covered by appliance standards that limit energy and/or water waste. Appliance standards can cover any energy- or water-using device, including home appliances, plumbing products, lighting products, and commercial and industrial equipment. In general, states can set standards for any products that are not subject to national standards. State standards are set by legislatures or state agencies and apply to products sold or installed in a state.

Proposed efficiency standards will cut energy waste

Federal energy efficiency standards for general service fluorescent lamps (common fluorescent tubes), have been around since 1992, with the most recent update going into effect in 2018. Starting in 2012, wider diameter fluorescent tubes, referred to as “T12”, have not been able to meet the federal standards. However, millions of inefficient T12 fluorescent tubes were sold in 2018, and they can still be found on the shelves of most hardware and do-it-yourself stores today. That is because the definition of general service fluorescent lamps excludes tubes that have a CRI of 87 or higher. When the federal standard for fluorescent tubes was first developed, such high-CRI fluorescent tubes were expensive specialty products. Since then, industry has introduced high-CRI, low efficiency, low-priced fluorescent tubes, creating a significant loophole in the federal standard.

In the current political environment, it would be very difficult, if not impossible, to change the federal standard to also cover high-CRI fluorescent tubes. It is up to states to close this loophole.

The standard is already adopted in other states

In 2018 Vermont adopted a standard requiring high-CRI 4-foot and 8-foot fluorescent tubes to meet the current federal efficiency requirements beginning July 1, 2020. Vermont also banned the sale of light fixtures designed to use T12 tubes starting July 1, 2019. California is currently conducting a rulemaking to adopt standards for high-CRI fluorescent tubes and other federally-exempt linear fluorescent tubes. Several states including Colorado, Connecticut, Hawaii, Illinois, Maine, Massachusetts, Nevada, Rhode Island, New York, Pennsylvania, and Washington have filed or are considering legislation to close the high-CRI fluorescent tube loophole.

Savings

Consumers would save \$365 million annually on their electricity bills

Annual electricity savings by 2025 are enough to power about 265,000 households for a year

Annual emissions reductions equivalent to the emissions from more than 275,000 cars in one year

Energy

3

Billion kWh
Annually by 2025

Money

365

Million \$
Annually by 2025

Emissions

1.3

Million metric tons CO₂
Annually by 2025

Consumers will benefit from the standard

If enough states adopt efficiency standards for high-CRI fluorescent tubes, the market for loophole tubes will shrink and eventually the lighting industry will stop making them. If all fluorescent tubes sold nationally complied with the current federal standards, by 2025 annual electricity savings would reach 3 billion kWh – enough to power about 265,000 households for a year – saving consumers and businesses \$365 million annually on their electricity bills. Carbon dioxide emissions would be reduced by about 1.3 million metric tons in 2025, which is equivalent to the emissions from more than 275,000 cars in one year.

Efficient technology choices readily available now

Energy efficient, high-CRI lighting options are available for the special applications that need them. Though there are no T12 fluorescent tubes that meet current federal energy efficiency standards, there are high-CRI T8 fluorescent tubes that do. Switching from T12 to T8 fluorescent tubes usually means also switching the electronic devices (ballasts) that all fluorescent tubes need to operate. T8 tubes that meet federal standards paired with modern electronic ballasts use only half the electricity of obsolete T12 tubes paired with magnetic ballasts to produce the same amount of light. This means that even though lighting customers must purchase a new ballast when switching from T12 to T8 tubes, their electricity bill savings far outweigh their costs over the life of the T8 tube.

Many lighting customers are leaving fluorescent technology completely behind and moving to light-emitting diodes (LEDs). Tube LEDs (TLEDs) look like T8 fluorescent tubes and are available in both regular and high-CRI models. TLEDs are often drop-in replacements for T12 or T8 fluorescent tubes in existing light fixtures. Some TLEDs use the existing fluorescent ballasts, and some do not need ballasts at all. TLEDs claim a larger share of the total fluorescent tube market every year because they save more energy, last longer, and offer even better life-cycle economics.

