

<b>DOCKETED</b>	
<b>Docket Number:</b>	18-AAER-08
<b>Project Title:</b>	Federally Exempted Linear Fluorescent Lamps
<b>TN #:</b>	229509
<b>Document Title:</b>	GE Lighting Comments - On Proposed Title 20 Regulations for Linear Fluorescent Lamps
<b>Description:</b>	N/A
<b>Filer:</b>	System
<b>Organization:</b>	GE Lighting
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	8/22/2019 2:23:37 PM
<b>Docketed Date:</b>	8/22/2019

*Comment Received From: GE Lighting*  
*Submitted On: 8/22/2019*  
*Docket Number: 18-AAER-08*

**On Proposed Title 20 Regulations for Linear Fluorescent Lamps**

*Additional submitted attachment is included below.*



## GE Lighting

1975 Noble Road  
East Cleveland, OH 44112  
USA

**August 22, 2019**

Submitted via email: [docket@energy.ca.gov](mailto:docket@energy.ca.gov)

Docket Number: **18-AAER-08**

Subject: **GE Comments on proposed Title 20 regulations for Linear Fluorescent Lamps**

Commissioner Andrew McAllister  
California Energy Commission  
1516 Ninth Street  
Sacramento, CA 95814

Dear Commissioner McAllister,

GE appreciates the opportunity to comment on the California Energy Commission's (CEC) proposed regulations on Linear Fluorescent Lamps. GE Lighting manufactures a wide variety of products including the products covered by this proposed regulation. GE supports comments submitted by the National Electrical Manufacturer Association (NEMA) and is providing supplementary comments on a few topic areas.

GE Lighting does not support the proposed increased State regulations on linear fluorescent lamps. These products have low sales volumes designed for niche applications. This simply adds more regulatory complexity for the State and manufacturers while providing little energy savings. GE does not believe that the small amount of energy savings that would be obtained from these proposals are cost justified. In addition, the products proposed for regulation are already in transition to LED and further regulations are not needed or necessary.

### **THE ANALYSIS GREATLY OVERSTATES ENERGY SAVINGS AND UNDERESTIMATES COSTS**

The analysis in the proposal incorrectly concludes that the savings are significant, and that the proposal can be cost justified. The savings estimates greatly overstate the potential energy savings due to several incorrect assumptions. The High CRI exemption is primarily used by 4' T12 fluorescent lamps. Over 2/3rds of these product types are used in residential applications on a national scale. In CA, this percentage is higher due a much greater focus on energy savings through codes, standards, and efficiency programs. A fair assumption would be that a very small percentage (<10%) of California's 4' T12 lamps are used in Commercial applications. However, the analysis is incorrectly based on commercial use. If homeowners can no longer find a 4' T12 lamp on the market, most will be forced to retrofit their fixture with new lamps and ballasts or change the fixture to a new LED or Fluorescent fixture. TLED replacement

lamps may or may not work on inexpensive old electromagnetic ballasts, so TLEDs will only be an option for some homeowners.

The economic analysis should be based on the most typical problem caused by regulating 4' T12 fluorescent lamps out the market. This is a problem where a homeowner must call an electrician to retrofit or replace a lighting fixture because the lamp is no longer available. In this most likely scenario, and when considering the cost of hiring an electrician to come to your home, the regulation cannot be cost justified.

The potential energy savings gained by this regulation is greatly overstated because the number of T12 lamps being sold continues to decrease greatly since 2015. Industry expects to sell less than half the number of T12 lamps sold in 2015. All linear fluorescent lamps sales are decreasing, with a typical annual decrease of between 10 to 20% a year. The analysis assumes relatively flat sales based on looking at an index report instead of looking at the decreasing unit sales report. Due to the greatly decreased number of lamps being used, and the greatly decreased number of hours being burned in residential applications, and the fact that residential ballasts underdrive fluorescent lamp power by about 40%, the amount of energy saved will be far less than predicted by this report.

With many significant errors, we believe that the entire energy savings analysis needs to be redone using correct data to determine if this proposal can be cost justified.

## **THE HIGH CRI EXEMPTION IS NECESSARY FOR FULL SPECTRUM LAMPS**

The original reason for the HIGH CRI exemption at the federal level was to allow the sale of FULL SPECTRUM fluorescent lamps that produce a smooth spectrum of light like sunlight. GE has produced Full Spectrum lamps for many years under the names of Chroma 50 and Chroma 75. Both Full Spectrum lamp types have a CRI of 90 or higher. Because of the large amount of RED and BLUE energy in this type of light source the lumen measurement is low, and the amount of energy used is the same. Due to the lower lumen measurement and the same wattage, the Lumens-per-Watt rating is low, and the lamp cannot technically meet the same efficiency levels. **It is not technically feasible because of the way the human eye perceives light.**

It is technically feasible to produce a lamp with an 87 CRI that is tri-phosphor, but this lamp type has spectrum peaks and does not have a smooth spectrum output. If the goal is to eliminate non-full spectrum, high CRI lamps from using this exemption, we recommend that CA tighten up, but not eliminate the high CRI exemption. Any light source offering a smooth Full Spectrum across the entire RED to BLUE visible range and that has a CRI of 90 or greater, will not be able to meet the high efficiency requirements. FULL SPECTRUM HIGH CRI lamps should not be eliminated from the market with no possible technical replacement.

## **2' AND 3' FLUORESCENT LAMPS CAN NOT BE ELIMINATED IN 2021**

Two-foot and three-foot fluorescent lamps use little energy and have relatively low sales volumes. The proposal seeks to remove all fluorescent versions from the marketplace within 12 months for a product that has had over 70 years of installation and use! It is premature to remove all fluorescent versions of

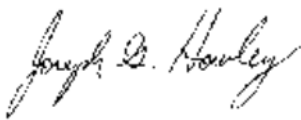
shorter lamps from the market immediately. Shorter TLED versions are relatively new and the technology is not mature enough to make such a drastic transition in such a short period of time without creating serious replacement and conversion problems. While industry has been developing 4' TLED replacement lamps for a few years and has resolved many technical issues, the 2' and 3' versions are relatively new and untested by much use. Many application problems are still unknown. CEC originally proposed to set efficiency regulations for 2' and 3' fluorescent lamps that could be met by the most efficient the 2' and 3' lamps using T8 fluorescent technology. Such a proposal would be far better than the IOU proposal. The IOU proposal goes too far too fast by overstating energy savings, understating costs, and making bad or dismissive assumptions about the technical issues involved in a wholesale conversion, and all within 12 months! Such a proposal will create a variety of significant conversion lighting problems for California owners of existing installations if no fluorescent lamp option is available.

Even if this is the CEC's ultimate intention (to eliminate 2' and 3' fluorescent technology) CEC should approach this with a rationale series of steps or stages. A staged approach would allow more time for shorter TLED technology to develop fully and allow time to resolve technical conversion issues.

Such a staged approach might include first placing an efficiency regulation on 2' or 3' fluorescent luminaires, causing a conversion to LED technology first with new fixtures for 2' and 3' lamps. After 3 or 4 years of a conversion to new LED luminaires, the next stage could be setting efficiency regulations on 2' or 3' fluorescent lamps such that only the most efficient fluorescent lamps can still be produced as replacement lamps. This time will also allow TLED technology to develop more fully, become less costly, and allow the industry to resolve any technical conversion issues. After 5 or 6 years, 2' and 3' TLED technology should be mature enough that a TLED efficiency standard could be implemented. This would ease the market into a transition while greatly reducing lighting conversion problems for the citizens of California. It is a much more logical and rational solution for the citizens of California.

Thank you for considering our concerns.

Sincerely,

A handwritten signature in cursive script, reading "Joseph G. Howley Jr.", written in dark ink.

Joseph G. Howley Jr.  
Mgr. – Industry Relations

GE Lighting  
1975 Noble Road  
Cleveland, OH 44112

216-266-9729  
joseph.howley@ge.com