

Appliance Standards Awareness Project
American Council for an Energy-Efficient Economy
New York State Energy Research and Development Authority
Northwest Energy Efficiency Alliance

August 1, 2022

Dr. Stephanie Johnson
U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy
Building Technologies, EE-5B
1000 Independence Avenue SW, Washington, DC 20585

RE: Docket Number EERE-2019-BT-STD-0030: Notice of Proposed Determination for Energy Conservation Standards for General Service Fluorescent Lamps

Dear Dr. Johnson:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), the American Council for an Energy-Efficient Economy (ACEEE), the New York State Energy Research and Development Authority (NYSERDA), and the Northwest Energy Efficiency Alliance (NEEA) on the notice of proposed determination (NOPD) for energy conservation standards for general service fluorescent lamps (GSFLs). 87 FR 32329 (May 31, 2022). We appreciate the opportunity to provide input to the Department.

In the NOPD, DOE determined that amended efficiency standards for GSFLs are not economically justified. DOE stated that the projected energy savings from more stringent standards “comes in incurring a faster market shift to solid state lighting rather than a reduction in energy use among existing GSFL consumers”.¹ However, we believe that this statement also points to the potential opportunity to achieve significant savings through the regulation of linear lamps under a single standard (i.e., a technology-neutral approach). In particular, we believe that significant energy savings could be achieved through an accelerated transition of the market to LEDs. In addition, we are concerned that the exemptions in the current standards for GSFLs (e.g., for high-CRI and impact-resistant fluorescent lamps) continue to allow the sale of inefficient lamps. We understand that DOE cannot address these items in the current rulemaking, and we therefore encourage the Department to pursue these opportunities in a separate rulemaking.

We encourage DOE to explore ways to establish technology-neutral standards for linear lamps. In the NOPD, DOE stated that “TLEDs have gained market share at the expense of GSFLs over time and are marketed as suitable substitutes for GSFLs”.² Since GSFLs and TLEDs provide the same utility for consumers, it would make sense for them to be required to meet the same standards. According to the National Electrical Manufacturers Association (NEMA) lamp sales indexes, in Q1 2022, about two thirds of linear lamp shipments were still fluorescent.³ We believe that a technology-neutral standard for all

¹ <https://www.regulations.gov/document/EERE-2019-BT-STD-0030-0012>. p. 32346.

² <https://www.regulations.gov/document/EERE-2019-BT-STD-0030-0012>. p. 32336.

³

<https://www.nema.org/analytics/indices/view/t-led-lamp-shipments-index-increases-in-first-quarter-2022-compared-to-previous-year>

linear lamps could result in significant energy savings by accelerating the transition to LED lighting. TLEDs are much more efficient than their GSFL counterparts; replacing a linear fluorescent lamp with a TLED can reduce power consumption by about 50%.⁴ A 2022 ASAP/ACEEE report estimated that a complete transition from fluorescent to LED lighting would yield cumulative CO₂ emissions reductions through 2050 of about 200 million metric tons, the vast majority of which would come from linear lamps.⁵

In the NOPD, DOE addresses the limits of its authority to consider lamps outside the scope of this rulemaking, stating that “*this* proposed determination addresses only GSFLs defined in 10 CFR 430.2. DOE is not authorized to consider any product not meeting this definition, such as TLEDs, as a part of this proposed determination” (emphasis added).⁶ While we recognize that DOE cannot incorporate TLEDs into the current rulemaking, we encourage DOE to explore the possibility of setting technology-neutral standards for all linear lamps in a separate rulemaking.

We encourage DOE to initiate a separate rulemaking to address opportunities to achieve energy savings from exempt fluorescent lamps. When Congress enacted the Energy Policy Act of 1992, the eight exempted GSFLs were intended to exclude specialty, “non-general” applications. However, as standards took effect, some of these exempt lamp types became more widespread, as the lamps were often marketed for general uses.⁷ In particular, high-CRI and impact-resistant linear lamps have gained significant market share, which is likely to continue as long as they remain outside the scope of energy efficiency standards.

According to the NEMA lamp sales indexes, in Q1 2022, T8, T12, and T5 lamps accounted for 49.6%, 9.7%, and 7.5% of the market of linear fluorescent lamps, respectively.⁸ T12 lamps pose a particular problem as they are generally the most inefficient, and we understand that all T12 lamps do not meet the 2018 GSFL standards. The 2015 U.S. Lighting Market Characterization (LMC) report showed average efficacies of T12 lamps of 70 to 80 lumens per watt (lm/W).⁹ Individual models may be far less efficient—a recent review of the market revealed a high-CRI 4-foot medium bi-pin T12 lamp for sale with an efficacy of 55 lm/W (meaning that this lamp is almost 40% less efficacious than a lamp that just meets the GSFL standards).¹⁰ These T12 lamps are sold primarily as high-CRI lamps and (to a lesser extent) impact-resistant lamps, and they are therefore exempt from standards.^{11,12} While the market is beginning to transition to LED technology, the NEMA data show that the decline in the market share of linear fluorescent shipments is mostly due to the shift to TLEDs in the T8 segment, while the market share of fluorescent T12s has remained relatively steady. We therefore believe that sales of exempt GSFLs are likely to remain significant even as the market shifts to TLEDs. Manufacturers have no impetus to increase efficacy in the absence of a

⁴ See, for example: https://www.espentech.com/files/catalog21_distribution.pdf

⁵ https://appliance-standards.org/sites/default/files/2022_ASAP_ACEEE_Report_Farewell_to_Fluorescents_0.pdf

⁶ <https://www.regulations.gov/document/EERE-2019-BT-STD-0030-0012>. p. 32336.

⁷ See, for example:

<https://www.homedepot.com/p/Philips-40-Watt-4-ft-Linear-T12-ALTO-Fluorescent-Tube-Light-Bulb-Daylight-5000K-2-Pack-543413/308641077>

⁸

<https://www.nema.org/analytics/indices/view/t-led-lamp-shipments-index-increases-in-first-quarter-2022-compared-to-previous-year>

⁹ https://www.energy.gov/sites/prod/files/2017/12/f46/lmc2015_nov17.pdf

¹⁰ <https://www.1000bulbs.com/product/152944/SYLVANIA-24477.html>; the standard for four-foot medium bi-pin lamps for 4,500K<CCT ≤7,000K is 88.7 lm/W.

¹¹ Shat-R-Shield’s impact-resistant T12 fluorescent lamps:

https://www.shatrshield.com/products/shatter-resistant_lamps/fluorescent/t12/

¹² We note that some T8s are also sold as exempt lamps.

standard, and as long as these exempt lamp types remain a low-cost option in the market, they will likely not naturally transition quickly to TLEDs.

In a 2019 report, the California Energy Commission (CEC) estimated that replacing a 4-ft T12 with a compliant T8 lamp yields energy savings of 45 kWh/yr (a savings of 37% relative to the T12 baseline lamp).¹³ CEC also estimated per-unit energy savings for 8-foot standard output and high output lamps of 83 and 126 kWh/yr, respectively. With T12 lamps approaching 10% of the market and the additional presence of high-CRI and impact-resistant T8 lamps in the market,¹⁴ we believe that significant energy savings could be achieved by establishing standards for the exempt lamp types.

In the NOPD, DOE addressed its authority, stating that, “it is not within the scope of DOE’s authority in *this* rulemaking to modify these exemptions for GSFLs” (emphasis added).¹⁵ We recognize that DOE cannot modify the definition of GSFL to include statutorily exempt lamps, and we therefore encourage DOE to pursue setting standards for exempt lamps in a separate rulemaking.

We note that states have taken action to address the sale of inefficient linear fluorescent lamps that are exempted from the GSFL standards. Specifically, Nevada, Washington, DC, Massachusetts, Oregon, New Jersey, Colorado, Hawaii, and Vermont have all adopted state standards for high-CRI lamps.¹⁶ In May 2022, New York state passed legislation granting NYSERDA the authority to set standards for federally exempt fluorescent lamps.¹⁷ In July, 2022, the CEC announced an upcoming rulemaking for standards for ‘Federally Exempted Linear Fluorescent Lamps,’ which will likely include high-CRI and impact-resistant lamps as well as <4-foot linear fluorescent lamps.

Thank you for considering these comments.

Sincerely,



Rachel Margolis
Technical Advocacy Associate
Appliance Standards Awareness Project



Jennifer Amann
Senior Fellow
American Council for an Energy-Efficient Economy



Chris Corcoran
Team Lead – Codes, Products, & Standards
New York State Energy Research and
Development Authority (NYSERDA)



Blake Ringeisen
Sr. Engineer, Codes and Standards
Northwest Energy Efficiency Alliance

¹³Pasha, Soheila. 2019. Analysis of Proposed Efficiency Standards for Linear Fluorescent Lamps Exempt from Federal Regulation. California Energy Commission. Publication Number: CEC-400-2019-009-SD.

¹⁴Example of high-CRI T8 lamp:

<https://www.amazon.com/Philips-209056-F32T8-Straight-Fluorescent/dp/B002DR5U9Y>; Example of impact-resistant T8 lamp: <https://www.gecurrent.com/catalog/t8-covrguard-shatter-resistant-lamp-25784>

¹⁵ <https://www.regulations.gov/document/EERE-2019-BT-STD-0030-0012>. p. 32335.

¹⁶With effective dates 2020-2023: <https://appliance-standards.org/product/high-cri-linear-fluorescent-lamps>

¹⁷ <https://www.nysenate.gov/legislation/bills/2021/a10439>; federally exempt fluorescent lamps include high-CRI linear fluorescent lamps (LFLs), impact-resistant LFLs, cold-temperature LFLs, and <4-foot LFLs.