

**Appliance Standards Awareness Project
American Council for an Energy-Efficient Economy
Consumer Federation of America
National Consumer Law Center
Natural Resources Defense Council
Northeast Energy Efficiency Partnerships
Northwest Energy Efficiency Alliance**

June 1, 2020

Ms. Lucy deButts
U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy
Building Technologies Office, EE-5B
1000 Independence Avenue, SW
Washington, DC 20585-0121

RE: Energy Conservation Standards for General Service Fluorescent Lamps and Incandescent Reflector Lamps; EERE-2019-BT-STD-0030

Dear Ms. deButts:

This letter provides input from the Appliance Standards Awareness Project (ASAP), American Council for an Energy-Efficient Economy, Consumer Federation of America, National Consumer Law Center (on behalf of its low-income clients), Natural Resources Defense Council, Northeast Energy Efficiency Partnerships, and Northwest Energy Efficiency Alliance regarding the Department of Energy's (DOE) Request for Information (RFI) concerning energy conservation standards for General Service Fluorescent Lamps (GSFL) and Incandescent Reflector Lamps (IRL). 85 Federal Register 21104 (May 1, 2020). The RFI begins DOE's statutorily required review of the standards for these products. We appreciate the opportunity to comment.

In summary, we urge DOE to conduct the full analysis necessary to determine whether potential new or amended standards would save a significant amount of energy and be technologically feasible and economically justified. DOE must fully account for market and technological changes since the last rulemaking, including developments with LED products which are ready substitutes for currently regulated lamps. At the end of these comments, we address a few of the specific issues raised by DOE in the Request for Information.

DOE should conduct a full analysis to evaluate potential amended standards for GSFLs and IRLs.

In the RFI, DOE seeks information to determine whether the agency should propose a “no new standard” determination.¹ DOE must conduct a full analysis to evaluate whether the statutory criteria for amended standards have been met. AS DOE shows in the RFI, products with efficiency performance significantly exceeding the maximum levels evaluated in the most recent rulemaking are now certified to DOE.² In addition, DOE cannot assume that the economic analysis of the last rulemaking is valid for the evaluation period of this current rulemaking. The markets for GSFLs and IRLs have changed substantially since that rulemaking was conducted (2011 – 2015). Application of new GSFL standards in 2018 eliminated many lamp options from the market and caused manufacturers to revamp their product offerings. LED linear and reflector lamp products have surged in popularity and dropped in price. As a result, the economics of lamp choices have changed. In addition, as DOE recognizes in the notice, amended standards can include lamps that are not currently subject to any federal standards. DOE is specifically authorized to expand scope for GSFLs (42 U.S.C. 6295(i)(5)) and did evaluate scope expansion in both prior rulemakings. Although DOE declined to expand scope in the most recent rulemaking, the market has changed since then, and this needs to be taken into account.

Finally, as DOE acknowledges, DOE has never completed its evaluation of standards for certain ER, BR and R lamps.³ Several of these lamp types sell in high volumes. DOE must conduct a full evaluation of potential amended standards including higher standards levels and application of standards to more lamp types.

Legal status of reflector lamp standards.

Standards for reflector lamps are subject to ongoing litigation (New York v. DOE, 2d Cir. No. 19-3652; NRDC v. DOE, 2d Cir. No. 20-699). DOE published an expanded definition of general service lamps (GSLs) in 2017 that included most reflector lamps, including all IRLs.⁴ Statute requires that, if certain conditions occur, a 45 lpm standard applies to all GSLs sold as of January 1, 2020, inclusive of IRLs. Conditions triggering the 45 lpm standard occurred. Unfortunately, in violation of the statute’s anti-backsliding clause, DOE illegally withdrew the expanded definition in September 2019 then, once again illegally determined that the January 2020 standards contained in the statute do not apply.⁵ We expect that, in time, DOE will be compelled to implement the 45 lpm standards for GSLs as defined in the 2017 final rule. When that happens, DOE’s regulatory work on IRLs will become subsumed into its work on GSLs, making independent rulemaking work for IRLs unnecessary. Although we believe this outcome is compelled by the language of the statute, because the outcome of litigation is by its nature uncertain, we provide comment on incandescent reflector lamps in this letter to assist the Department in advancing the current rulemaking in the unlikely event it remains necessary.

¹ 85 Fed. Reg. 25328

² 85 Fed. Reg. 25334

³ 85 Fed. Reg. 25329

⁴ 82 Fed. Reg. 7276 and 7322.

⁵ 84 Fed. Reg. 46661 and 84 Fed. Reg. 84 Fed. Reg. 71626

DOE should strive for technology neutral linear lamp standards.

When possible, standards should be designed to set a performance threshold irrespective of technology. Currently, DOE standards apply to general service *fluorescent* lamps. However, highly efficient tubular LEDs or TLEDs are marketed as ready substitutes for both new installations and as replacements.⁶ NEMA's lamp index recognizes that TLEDs compete against GSFLs, showing graphically how TLEDs have gained market share at the expense of GSFLs over time.⁷ In citing the NEMA data, DOE recognizes that LEDs are a substitute for GSFLs, writing, "In the first quarter of 2019 tubular light emitting diodes (TLEDs) accounted for 30.4 percent of *fluorescent* lamp shipments" (emphasis added).⁸

DOE should evolve its regulations so that products that provide the same general lighting service must comply with the same standards. Congress has provided at least two legal authorities that the agency should consider as potential bases for moving to technology neutral standards. DOE has broad authority to cover "electric lights." (42 U.S.C. 6311(2)(B)(v)). At a minimum, DOE could use this authority to regulate new light fixtures but may also consider individual lamps to be electric lights. DOE also has authority to cover products that meet certain minimum consumption thresholds. (42 U.S.C. 6295(l)(1)).

DOE should evaluate GSFL scope expansion.

As DOE notes in the RFI, 42 U.S. Code 6295(i)(5) provides DOE authority to cover additional general service fluorescent lamp types. As noted above, DOE also has broad authority to set standards for additional products under 42 US Code 6311 and 42 US Code 6295(l). We believe these authorities potentially could be used to bring a range of very low efficiency linear fluorescent lamps into this rulemaking's scope.

Some types of linear fluorescent lamps that fall outside the scope of current federal regulation have gained market share in recent years. Lamps with a Color Rendering Index (CRI) of 87 or greater have become very common. Impact resistant fluorescent lamps are also available. These lamp types, initially exempted for specialized applications, are now widely sold for general purpose applications.⁹ For an

⁶ Many examples are easily found on the internet. Here are two. From Philips Lighting, marketing their LED Linear Tube, Model 046677544188: "Eliminate ballast maintenance with Philips MainsFit LED tubes. This T8 tube is designed to replace T8 and T12 tubes on shunted and non-shunted sockets, looks and feels like fluorescent, and has a cool white light with long lifetime." <https://www.usa.lighting.philips.com/consumer/p/led-linear-tube/046677544188> From GE Current: "Designed to fit in fixtures intended for linear fluorescent lamps (LFLs), LED tubes are a smart, efficient and long-lasting solution to replace traditional lighting. We offer three solutions: UL Type A, UL Type B, and UL Type C. These are offered in various lengths and sizes, including T8 and T5, as well as in glass and plastic." <https://products.gecurrent.com/led-tubes>

⁷ Lamp index available at <https://www.nema.org/Intelligence/Indices/Pages/Linear-Fluorescent-Lamp-Indexes-Continue-Year-Over-Year-Drop-in-First-Quarter-2019-while-T-LED-Market-Penetration-Increases.aspx> and cited at 85 Fed. Reg. 25337

⁸ 85 Fed. Reg. 25337

⁹ See for example the Philips Lighting 40 watt 4 ft. ALTO Superior Linear T12 (model 422675) marketed on Home Depot's website as "Ideal for general purpose lighting in your bathroom and kitchen" at <https://www.homedepot.com/p/Philips-40-Watt-4-ft-ALTO-Supreme-Linear-T12-Fluorescent-Tube-Light-Bulb-Cool-White-4100K-10-Pack-422675/203466573> accessed on 5/25/2020. This high CRI lamp and many other widely available lamps falls well below federal standards for general service fluorescent lamps.

updated analysis of state standards, ASAP estimated projected national annual sales of 14.2 million high CRI T-12 lamps for 2022.¹⁰ This estimate does not include high CRI T8 lamps, which manufacturers have introduced to the market in recent years. As shown in the recent California Energy Commission (CEC) draft staff report, for a two-lamp fixture, T-12 lamps will use 96 watts, while T-8 lamps meeting current standard levels will use just 59 watts, and T-LEDs just 30 watts to provide the same lighting service. CEC estimates per fixture savings at 45 and 83 kWh per year for standards compliant fluorescent and TLED lamps, respectively.¹¹

Several states (Vermont, Colorado, Washington and Hawai'i) have set standards for high CRI fluorescent lamps and other states are considering similar standards. In addition, California is considering setting standards for impact-resistant fluorescent lamps. DOE should consider standards for each of these lamp types.

DOE should evaluate standards for “certain ER, BR and R lamps”

Though again with the caveat that we believe DOE's actions to evade the statutory 45 lpw standard are unlawful and will be vacated, we support DOE's evaluation of certain ER, BR and R lamps for potential standards as part of this rulemaking. ER and BR stand for elongated and bulged reflectors, which are reflector lamps that have a slightly different exterior shape than conventional reflector lamps. The slightly different dimensions do not materially impact the lamp's performance or user experience. These lamps are used in the same applications as regulated reflector lamps. Both regulated and exempt reflectors are marketed for general purpose lighting. For example, GE advertises its 65-watt BR 40 as an “indoor flood”¹² and also advertises its 38-watt PAR38 as suitable for indoor flood applications. Similarly, Philips markets both certain BR and R20 lamps and regulated reflectors as “flood” lamps.

The history of federal reflector lamp standards provides further evidence of the interchangeability of these lamp types. Congress initially exempted BR and ER lamps from federal standards in the 1992 law that first regulated reflector lamps at manufacturers' request because they represented a very small market share. But their market share ballooned once federal standards took effect. Their market share growth from virtually nothing to more than half of reflector sales demonstrated that these lamps are interchangeable with regulated reflectors. Congress narrowed the loophole in 2007, but sales volumes of the remaining exemptions remained large. In addition, as described above, the lamp market has evolved substantially since Congress last narrowed the exemption for certain reflectors in 2007.

¹⁰ See https://appliance-standards.org/sites/default/files/2020_Model_Bill_assumptions_table.pdf We are not aware of any T-12 lamps that meet DOE standards. Therefore, we assume that all T-12 sales are high-CRI products. The estimate is based on the DOE shipments analysis and the NEMA lamp sales index. For projecting future shipments, we assume an annual rate of decline based on recent year trends in the NEMA index.

¹¹ California Energy Commission. “Draft Staff Report: Analysis of Proposed Efficiency Standards for Linear Fluorescent Lamps Exempt from Federal Regulation.” 2019 Appliance Efficiency Rulemaking Docket Number 18-AAER-08 C. available at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=228860&DocumentContentId=60204>.

¹² See <https://www.lowes.com/pd/GE-Classic-65-Watt-Dimmable-BR40-Flood-Incandescent-Light-Bulb-4-Pack/1000443781> and <https://www.lowes.com/pd/GE-Classic-38-Watt-EQ-PAR38-Dimmable-Soft-White-Reflector-Light-Fixture-Halogen-Light-Bulb-2-Pack/1000443301> accessed on 5/25/20.

DOE's 2015 Lighting Market Characterization estimated about 436 million incandescent reflectors in use and about 212 million halogen reflectors.¹³ Since federal IRL standards dating back to the 1990s were only met by halogen technology, all 436 million incandescent reflectors installed in 2015 were exempt lamps. While we expect that both incandescent and halogen reflector sales have declined as LEDs have gained sales, total stock and annual sales of unregulated reflectors most likely remains large in absolute numbers. DOE should gather data on the current sales volumes of certain ER, BR and R lamps. Compliance of regulated reflectors shows that standards are technologically feasible: we expect that sales volume remain large enough to justify DOE establishing standards for these products and that DOE's economic analysis will show that standards are economically justified.

Responses to RFI questions

This section provides our responses to some of the specific, numbered questions raised by DOE in the RFI.

Definitions. Even if DOE does not set standards for impact-resistant fluorescent lamps, DOE should add a definition to help prevent this category from developing into a loophole such as the one that developed for high CRI fluorescent lamps. We recommend the definition contained in the CEC Draft Staff Report.¹⁴

Baseline lamps. While current standards are appropriate for currently regulated lamps, DOE will need to identify appropriate baselines based on market offerings for all new lamps types considered for new standards, such as certain ER, BR and R lamps or any potential newly-regulated linear lamps.

Technology options and screening analysis. Currently regulated lamps include a range of improvements that can all be applied equally well to the lamp types that can be added to scope. DOE must evaluate these technology options for the potential scope additions.

Lamp substitution. LED lamps are ready substitutes for fluorescent and incandescent products. Establishing or raising standards for fluorescent or incandescent products will change the relative price of those products and LEDs, increasing the number of consumers who choose LEDs. The economic and energy saving effects must be included in DOE's evaluation of higher standards. DOE has evaluated how standards change market shares between regulated and non-regulated products in past dockets for other product categories (e.g., furnaces; general service lamps) and must do so here.

Market failures. Various market failures often impede the adoption of cost-effective energy efficiency technologies. Market failures can cause consumers to select lamps that cost them more to own and operate than alternatives that save energy and provide the same or better performance. Causes of market failure include high information costs relative to the savings at stake and principal agent (or split incentive) barriers. In the former, consumers focus on first cost because they lack information about savings, do not trust information available or lack the time to address their information gaps or

¹³ U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. *2015 U.S. Lighting Market Characterization*. November 2017.

¹⁴ <https://efiling.energy.ca.gov/GetDocument.aspx?tn=228860&DocumentContentId=60204>.

uncertainty. In the latter, the person (e.g., a landlord) making a purchase decision does not directly benefit from the savings and therefore has little or no incentive to buy slightly more expensive energy efficient products rather than lowest cost products. The economic literature provides additional examples and robust analysis of market failures that result in sub-optimal levels of energy efficiency.¹⁵

Thank you for considering these comments.

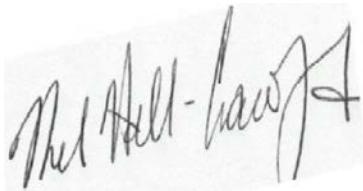
Sincerely,



Andrew deLaski
Executive Director
Appliance Standards Awareness Project



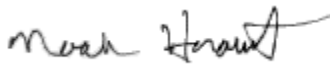
Jennifer Amann
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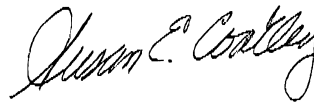
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¹⁵ See for example: Hirst, E., & Brown, M. (1990). "Closing the efficiency gap: barriers to the efficient use of energy". Resources, Conservation and Recycling, 3(4), 267-281, and see International Energy Agency. (2007). "Mind the Gap. Quantifying Principal-Agent Problems in Energy Efficiency"; and see Jaffe, A. B., & Stavins, R. N. (1994). "The energy-efficiency gap: What does it mean?" Energy Policy, 22(10), 804-810 and Dietz, T. (2010). "Narrowing the US energy efficiency gap." Proceedings of the National Academy of Sciences, 107(37), 16007.

A handwritten signature in black ink, appearing to read "Louis Starr". The signature is written in a cursive style with a large, looped initial "L".

Louis Starr, P.E.
Energy Codes and Standards Engineer
Northwest Energy Efficiency Alliance