April 19, 2023

Chairwoman Sollman
Vice-Chair Findley

RE: HB 2531 – Relating to fluorescent lamps; prescribing an effective date ("Clean Lighting")

Dear Members of the Senate Committee on Energy and Environment:

Please accept this testimony on behalf of the Appliance Standards Awareness Project (ASAP). We are a project of the American Council for an Energy Efficient Economy (ACEEE) dedicated to advancing cost-effective appliance and lighting standards at both the national and state level.

In 2022, ASAP and ACEEE published a joint report - *Farewell to Fluorescents: How a Phaseout Can Cut Mercury Pollution, Protect the Climate, and Save Money* – detailing research findings that Light Emitting Diodes (LEDs) are ready to widely replace fluorescent light bulbs. [1] We also published analysis showing savings states could see from transitioning common fluorescent light bulbs to LEDs, which can be found online and at the end of these comments.[2] We would be happy to provide additional information about this analysis or answer any questions.

HB 2531 WOULD SAVE RESIDENTS AND BUSINESSES MONEY, HAVE VERY FAST PAYBACKS
HB 2531 would transition off the sales of common fluorescent light bulbs, allowing LEDs to take their place. Because LEDs are twice as energy efficient as fluorescents, they generate significant electricity bill savings. ASAP estimates by 2030 Oregon would see $49 million in annual, statewide electricity bill savings due to transitioning from fluorescents to LEDs.[3] By 2050 this would result in cumulative savings of $617 million statewide on electricity bills.

Additionally, the majority of fluorescent light bulb sales today are for commercial buildings. ASAP estimates for the most common fluorescent light bulb type, the 4-foot T8, the commercial sector would see a payback period of less than one month. Each 4-foot T8 LED would then go on to save $19 per bulb over its lifetime, resulting in significant electricity bill savings for any building.

HB 2531 WOULD AVOID TOXIC MERCURY POLLUTION, GREEHOUSE GASES, AND SAVE ENERGY
All fluorescent light bulbs contain mercury, a potent neurotoxin that threatens human health and the environment. When fluorescent bulbs are accidentally broken—whether in homes, businesses, or the waste management system—they present a health hazard to those nearby. LEDs do not contain mercury, therefore transitioning away from fluorescents would avoid a source of mercury pollution coming into Oregon. ASAP estimates by 2050 Oregon would cumulatively avoid 171 pounds of mercury waste, enough to contaminate 8.5 billion gallons of water.

Furthermore, LEDs increased energy efficiency means the state would see reduced energy consumption and thereby also avoid greenhouse gas emissions. ASAP estimates in 2030 Oregon would see annual

[1] For the 2022 ASAP/ACEEE report and state savings analysis visit https://appliance-standards.org/clean-lighting
[2] See https://appliance-standards.org/sites/default/files/Oregon.pdf

savings of 643 gigawatt hours of electricity. From this, by 2050 Oregon could cumulatively avoid the release of 516,000 metric tons of carbon dioxide per year, the equivalent of 114,000 gasoline-powered passenger vehicles driven for one year.

LEDs ARE READY TO REPLACE COMMON FLUORESCENT LIGHT BULBS

LEDs have advanced tremendously over the last 10 years. Our lighting market research found that today LEDs are widely available and cost effective as replacements for general-purpose, white light fluorescent light bulbs across the different sizes and shapes. General-purpose, white light bulbs (see Figure 1) are most commonly found in office building settings or in certain residential situations like a kitchen or basement. When compared to their general-purpose fluorescent counterparts, LEDs were found to produce the same or better light quality, last 2-3 times longer, have positive economic outcomes for consumers, and not contain mercury. HB 2531 only proposes to transition out these types of fluorescents and would not cover specialty fluorescents, such as ultraviolet (UV) fluorescents used for suntanning booths or other specialty purposes.

Figure 1. General-purpose, white light fluorescent light bulbs.

HB 2531 IS A COST-EFFECTIVE WAY TO ACHIEVE STATE GOALS

Transitioning from fluorescent light bulbs to LEDs is a low-cost way for Oregon to cut energy waste, reduce electricity bills, and reduce greenhouse gases – helping the state meet its clean energy, energy efficiency, and affordability goals.

We would be happy to provide further information, answer questions, or provide technical assistance.

Thank you,

Brian Fadie, State Policy Manager
Appliance Standards Awareness Project

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2023 State Clean Lighting

Savings estimates for: Oregon

State	Potential annual reductions in 2030			Potential annual electricity savings in 2030 (GWh)	Potential annual electricity bill savings in 2030 (million 2020$)
	Mercury in lamps shipped (lbs)	Power plant mercury emissions (lbs)	CO_2 emissions (thous. MT)		
Oregon	14.6	0.003	45	643	49

Assuming a compliance date of 2025.

State	Potential cumulative reductions through 2050			Cumulative electricity bill savings through 2050 (million 2020$)	Total benefit–cost ratio
	Mercury in lamps shipped (lbs)	Power plant mercury emissions (lbs)	CO_2 emissions (thous. MT)		
Oregon	171	0.04	516	617	10.4

Assuming a compliance date of 2025. The total benefit-cost ratio is calculated as the present value of the total utility bill savings from products sold through 2050 for the recommended standard divided by the present value of the total additional costs.

Fluorescent vs. LED: Economic analysis for most-shipped lamps (commercial sector)

Fluorescent lamp type	LED incremental cost (2020$)	First-year electricity bill savings from LED (2020$)	Life-cycle cost savings from LED (2020$)	Payback period (years)
4-foot T12 – 40 W	2.59	6.93	32	0.3
4-foot T12 – 34 W	3.67	4.98	25	0.6
4-foot T8	0.54	3.37	19	0.03
4-foot T5	2.29	4.46	28	0.3
4-foot T5 high output	4.61	8.86	52	0.4
Pin-based CFL	3.02	5.54	16	0.4