

Responsiveness Summary of Comments on the Agency’s Draft Decision Document for the Restriction on the Sale of Mercury-Containing screw-based CFLs

February 17, 2022

The following is a summary of the comments received by the Agency of Natural Resources (Agency) and its response. Additional documentation and all comments will be posted at: www.mercvt.org

The Agency’s draft Decision document for the restriction on sale of mercury-containing screw-based CFL (fluorescent lamps) was posted for a 30-day public comment from December 28, 2021, through January 28, 2022. Comments were reviewed and considered by the Agency prior to finalizing the decision document that bans the sale of mercury-containing, screw-based compact fluorescent lamps in Vermont (retail or online sale) within one year.

Note: the term “lamp” is an industry term for bulb, lightbulb, lighting, or various devices for producing light or sometimes heat.

The following acronyms utilized throughout the document are as follows:

ACMP -	Advisory Committee on Mercury Pollution
ANR or Agency-	State of Vermont, Agency of Natural Resources
CSWD-	Chittenden Solid Waste District
CFL-	Compact Fluorescent Lamp
CVSWMD-	Central Vermont Solid Waste Management District
EPR-	Extended Producer Responsibility
GHG-	Green House Gas
LED-	Light Emitting Diode (type of non-mercury lamp)
LFL-	Linear Fluorescent Lamp
NEMA-	National Electrical Manufacturers Association (manufacturers’ association -submits the mercury-lamp collection/recycling plan to VT on behalf of lamp-manufacturers)
PSI -	Product Stewardship Institute
VPIRG -	Vermont Public Interest Research Group

Comment 1: Over 300 Vermont and out-of-state individuals submitted the following general comment.

General comment: I am strongly in favor of phasing out the sale of mercury lighting products in Vermont. Mercury-containing fluorescent lighting poses a threat to human health and the environment. And now that safer, more efficient, and cost-effective LED lighting is widely available, there is no reason to continue to sell mercury lamps.

Mercury-free LED lamps and light bulbs can replace virtually all mercury fluorescents sold today. LEDs are not only mercury-free, they also last 2-3 times longer than fluorescent lamps and use much less electricity. This means they result in less air pollution, reduced climate emissions, and lower utility bills.

Please take all necessary steps to begin the phase-out of inefficient mercury lighting today.

Response:

Thank you for your comments.

Comment 2: Submitted by: Jennifer Holliday, Director of Public Policy and Communications Chittenden Solid Waste District (CSWD) Vermont - January 18, 2022, and Lisa Liotta, General Manager Central Vermont Solid Waste Management District (CVSWMD) Vermont - January 28, 2022

Both Districts had concerns about the continuation of the manufacturer's collection program, the need for ongoing funding, and the value of the collection of mercury-containing bulbs for their residents and the environment. The concern is that once mercury containing CFL bulbs are banned from sale in the state, manufacturers may cease paying into and participating in the mercury-lamp collection and recycling extended producer responsibility (EPR) program. Specifically, the Agency was asked to notify the legislature of the possibility of this unintended consequence.

Longer term, CVSWMD also supports a study and review of LED light materials, which do not contain mercury, but do contain other toxic materials such as nickel, lead and arsenic, and whether an EPR program for LED products is warranted in Vermont.

Response:

Thank you for your comments. The Agency agrees with the importance of continuing the mercury-containing lamp EPR collection program in Vermont as this waste will continue to be produced for years to come. The Agency approved the current collection plan with a commitment from twenty (20) lamp manufacturers to fund the plan collectively through NEMA for a period of three years ending December 31, 2023.

The collection requirements in 10 V.S.A. Chapter 164A identify that a manufacturer who manufactures or manufactured a mercury-containing lamp, cannot sell mercury lamps into the state unless they are implementing an approved EPR collection plan. However, if a manufacturer's fails to implement and pay into the EPR collection plan, the Agency's only recourse is to issue a stop-sale for their mercury-containing general-purpose lamps. Some manufacturers may no longer sell mercury-containing lamps leaving a smaller group of manufacturers to cover the EPR collection programs costs. Modifying this provision in the

law could be beneficial in ensuring mercury-containing lamp collection and recycling continues for an appropriate period of time, for the continued protection of human health and the environment.

Regarding LEDs, the Agency is continually reviewing information on the materials in these lamps and the information is not consistent. The Agency is aware that LED lamp recycling exists in Vermont as some Districts are recycling them through the two lamp recyclers utilized by both districts and NEMA. Currently, there is no legislation to restrict LED lamps from being disposed in the landfill. However, as the availability of LED lamps increase in the waste stream, the Agency supports recycling over landfill disposal when possible.

Comment 3: Submitted by Efficiency Vermont, David Westman, Director of Regulatory and State Agency Affairs, Winooski, VT – January 28, 2022

Efficiency Vermont appreciates the opportunity to submit the following comments on the Agency of Natural Resources (“ANR”) draft determination that screw-based mercury-containing CFL lamps should not be sold, offered for sale, or delivered to a retailer for subsequent sale in the state of Vermont.

Efficiency Vermont agrees with ANR’s conclusion that screw-based light-emitting diode (“LED”) lamps provide the same or better overall performance at a cost equal to or better than that of mercury-containing compact fluorescent (“CFL”) lamps. As such, Efficiency Vermont supports the draft determination to restrict the sale and delivery of mercury-containing CFLs, and agrees with the draft determination’s timeframe for restriction of sales of one year. One year provides sufficient opportunity for retailers and distributors to prepare for the transition away from CFLs and phase out existing inventory.

Efficiency Vermont also agrees with ANR’s conclusion that the only mercury-containing lamp that should be banned from sale at this time is the screw-based CFL. The screw-based CFL can be readily replaced by screw-based LED lamps, which are non-mercury containing general-purpose lamps that are both readily available and provide the same or better overall performance at a cost equal to or better than the classes of mercury lamps.

However, as demonstrated in data provided by NEMA and ANR, non-mercury equivalents for other replacement lamps (including pin-based linear lamps, etc.) can be cost-prohibitive without technical assistance or financial incentives from Efficiency Vermont, and are not as widely available. Thusly, Efficiency Vermont agrees with ANR’s determination that, in accordance with 10 VSA §7152(a), other replacement lamps should not be restricted at this time. Restricting the sale of fluorescent lamps beyond screw-based CFLs would be inconsistent with 10 VSA §7152(a), and would create potentially burdensome economic impacts on Vermont suppliers and customers. Efficiency Vermont continues to work with its supply chain partners and developing customer demand for increased use of LED lighting in commercial and industrial settings, but believe it would be unduly burdensome and cost-prohibitive to force this on Vermont businesses during an unprecedented time of disruption to the supply chain and economic uncertainty.

As a general matter, Efficiency Vermont believes that if a product is ready to be retired or banned from sale, there should be a transition period of at least one year, but could be longer if warranted, to reduce market disruption for partners and customers. CFLs are already being replaced by LEDs on store shelves, but the current economic disruptions caused by the COVID-19 pandemic, including inflated material costs and difficulty accessing inventory, warrant the need for the full one-year transition period to limit negative impacts on the marketplace and customers.

Response:

Thank you for your comments.

Comment 4: Submitted by Scott Cassel, Chief Executive Officer/Founder PSI- Product Stewardship Institute, Inc., Boston, MA January 28, 2022

I am writing in support of ANR's draft determination that screw-based mercury-containing CFL lamps must not be sold, offered for sale, or delivered to a retailer for subsequent sale in Vermont. We would also urge that the ANR expand its review of the applicability of 10 VSA Section 7152(a)(6) from a limited consideration of the price of lamps that are of equivalent wattage and type to the cost of lamps of equivalent wattage and type over the life cycle of the product, which would allow consideration of a sales ban on other mercury-containing lamps.

Reducing the use of mercury in lighting products through a sales ban that effectively requires substitution with mercury-free lamps that are more energy efficient will avoid the risks of mercury exposure and release to the environment, as well as the need to manage mercury at the product's end-of-life. It will also prevent mercury from being recycled into new products and concurrently reduce greenhouse gas (GHG) emissions.

Vermont is a national leader in environmental protection with the highest per-capita collection and recycling rates for consumer products such as electronics, batteries, and paint in the US. While the state also has an EPR program for mercury-containing lamps that has increased the diversion of these products from the waste stream and reduced the quantity of mercury entering the environment, Vermont has an opportunity to take the next step and prevent these toxic products from being sold.

Response:

Thank you for your comments.

Comment 5: Submitted by Paul Burns, Executive Director VPIRG; Dan Quinlan, Chair Vermont Climate and Health Alliance; David K. Mears Executive Director Audubon Vermont; Lauren Hierl, Executive Director Vermont Conservation Voters; Hayley Jones, VT and NH State Director Community Action Works; Johanna Miller, Energy and Climate Program Director Vermont Natural Resources Council; Elena Mihaly, Vice President and Director Conservation Law Foundation; Michelle Fay, Executive Director Voices for Vermont's Children; and Robb Kidd, Conservation Program Manager Sierra Club Vermont, January 28, 2022.

Ending the sale of the most common mercury-containing fluorescent light bulbs in Vermont would significantly reduce toxic mercury pollution, while on a cumulative basis through 2050 it would lower carbon emissions equivalent to removing 19,000 cars off the road for a year and save Vermont consumers and businesses millions of dollars annually from lower electricity bills.

The Vermont Department of Environmental Conservation's initial determination on December 28, 2021 that screw-based mercury-containing CFL lamps shall not be sold, offered for sale, or delivered to a retailer for subsequent sale in the State of Vermont is an important first step. However, DEC's initial determination only addresses 2% of the mercury-lamp problem as CFLs have already been rejected by most consumers, who instead favor energy-efficient, mercury-free LEDs. Linear fluorescent tubes are a much larger problem in Vermont and are still being widely sold for residential and commercial use. With this narrow initial determination, DEC is turning its back on 103 gigawatt hours of annual electricity savings and roughly \$12 million in annual utility bill savings for Vermont consumers by 2030.

Linear LED tubes that replace linear fluorescent lamps (LFLs) are widely available and an easy retrofit solution that will save Vermont residents and businesses money year after year. Philips, GE Current, Osram-Sylvania and other major manufacturers publicize the ease of retrofitting with LED tubes and their cost-effectiveness. Philips Lighting advertises "simple retrofit solutions with spectacular energy savings," noting that their portfolio of LED retrofit tubes "enable hassle-free installation for all of your linear application needs." GE Current states in their catalog, "It's never been easier to upgrade from linear fluorescents to Current's LED tubes," and "Linear Fluorescent lighting is the most prevalent light source among Commercial and Industrial buildings. LED Tube conversions are the perfect fit for any industry."

The criteria under 10 V.S.A. §7152(a)(6) for continuing to allow the sale of mercury-containing linear fluorescent lamps have not been met, as cost-effective alternatives exist today which are widely available with equivalent – or in many cases – better performance. Plus, LED lamps are the least expensive option for lighting, perfectly aligned with Governor Scott's affordability priority for Vermont. DEC must go further and phase-out the most common linear fluorescent lamps categories, including all lengths of T5, T8, T12, U-bend, and pin-based CFLs. Tens of thousands of direct, drop-in mercury-free LED retrofits are already available on the market. These LED retrofit lamps have the added benefit of lasting 2-3 times longer lifetime than fluorescent lamps and they use half the energy (or less).

Allowing the sale of general-purpose fluorescent lighting to continue will significantly delay Vermont's transition to safer and more affordable energy-efficient alternatives. We urge DEC to expand its determination to end the sale of common linear fluorescent lamps as expeditiously as possible in order to stop this unnecessary source of harm to people's health and the environment.

Response:

Thank you for your comments. The Agency does not disagree that LED alternatives may have energy efficiency cost savings over the life cycle of the product. However, the Agency interprets 10 V.S.A. §7152(a)(6) requiring manufacturers to demonstrate no non-mercury lamp exists at a "cost equal to or better than" a mercury containing lamp, as the cost at *point of sale*. This narrow construction provides a clear and transparent benchmark for manufacturers when providing the demonstration required by 10

V.S.A. §7152(a)(6) without additional factors like energy efficiency, the cost of replacement fixtures, or other broader costs that may be beyond the Agency's expertise in waste management.

The Agency is interested in comparing costs of alternative LED lamps over time, which may result in additional bans on the sale of other mercury-containing lamps.

Comment 6: Submitted by Philip A. Squair, VP Government Relations, NEMA, Arlington, VA - January 28, 2022

As the leading trade association representing electrical and medical imaging manufacturers, the National Electrical Manufacturers Association (NEMA) submits these comments on the Draft Determination Notice on Sale of Mercury-Containing Lamps for the State of Vermont. These comments are submitted on behalf of NEMA Light Source Product Section member companies.

NEMA agrees with the findings of the Vermont Department of Environmental Conservation letter of December 28, 2021 and supports the Draft Determination for a one-year phase out for screw base compact fluorescent lamps.

NEMA represents some 325 electrical equipment and medical imaging manufacturers that make safe, reliable, and efficient products and systems. Our combined industries account for 370,000 American jobs in more than 6,100 facilities covering every state. Our industry produces \$130 billion shipments of electrical equipment and medical imaging technologies per year with \$38 billion exports.

Response:

Thank you for your comments.

Comment 6: Submitted by Jordan Wells, Director of Advocacy and Communications, National Stewardship Action Council, Sacramento, CA – January 28, 2022

The [National Stewardship Action Council \(NSAC\)](#), a 501(c)(4) non-profit organization, would like to express support for the determination that screw-based mercury-containing compact fluorescent lamps (CFL) shall not be sold, offered for sale, or delivered to a retailer for subsequent sale in the state of Vermont. However, we urge the Vermont Agency of Natural Resources to expand its determination to end the sale of common linear fluorescent lamps (LFLs), as cost-effective alternatives that don't contain mercury exist today. NSAC is comprised of governments, non-government organizations, businesses, and consumers with the vision for the United States to attain a circular and equitable economy, an economic system that eliminates waste and pollution and keeps materials in use. We'd like to thank the Vermont Agency of Natural Resources for the opportunity to provide comments on the draft determination.

In the past, fluorescent lamps were promoted as an energy-efficient alternative to incandescent and halogen lamps, and the risks associated with mercury in fluorescents were tolerated as a necessary trade-off. But that is no longer the case. In 2019, the U.S. Department of Energy concluded that LEDs "are revolutionizing the lighting market," explaining that they "have surpassed, or matched, all

conventional lighting technologies in terms of energy efficiency, lifetime, versatility, and color quality, and, due to their increasing cost competitiveness, LEDs are successfully competing in a wide variety of lighting applications. Going forward, LED technology is expected to continue to improve, with increasing efficacy and decreasing prices while enabling new opportunities for lighting design and energy savings”.¹ Now the industry is also in agreement, with the National Electrical Manufacturers Association (NEMA) conceding that mercury-containing screw-based CFLs have LED alternative lamps available that provide the same or better overall performance, and at a cost that is equal to or less than CFLs.

With its initial determination, the Vermont Agency of Natural Resources only addresses 2% of the mercury-lamp problem as CFLs have already been rejected by most consumers, who instead favor energy-efficient, mercury-free LEDs. Linear fluorescent tubes are a much larger problem and are still being widely sold for residential and commercial use. Linear LED tubes that replace CFLs are widely available and an easy retrofit solution that will save consumers and businesses money year after year. Plus, LED lamps are the least cost option for lighting. The Agency must go further and phase-out the most common linear fluorescent lamps categories, including all lengths of T5, T8, T12, U-bend, and pin-based CFLs. Tens of thousands of direct, drop-in mercury-free LED retrofits are already available on the market. These LED retrofit lamps have the added benefit of lasting 2-3 times longer lifetime than fluorescent lamps and they use half the energy (or less).

Other states are also looking to take similar action. [California’s Statewide Commission on Curbside Recycling and Recycling Markets](#), which the NSAC Executive Director was appointed to and elected Chair, is comprised of 16 stakeholders representing local governments, waste hauling businesses, and non-governmental organizations and that has issued 34 policy recommendations to the State Legislature that received unanimous consensus amongst the Commissioners. Included in their first policy recommendation, is banning the sale of fluorescent lamps: “Some products are just toxic and unnecessary and have safer, cheaper alternatives making their sale unnecessary and costly... fluorescent lamps fit this category and we recommend that California ban their sale to stop adding costly, dangerous and unnecessary mercury into homes and the environment since LED lamps are more energy efficient, durable, non-toxic, and can be disposed of in the regular trash.” Like Vermont, California legislators may be looking to phase out the sale of CFL and LFLs in the state in legislation introduced in 2022.

The National Stewardship Action Council urges the Agency to prioritize the health of Vermont citizens as well as the environment by finalizing this determination and prohibiting the sale of CFLs and LFLs.

¹Energy Savings Forecast of Solid State Lighting in General Illumination Applications, Prepared by Navigant Consulting for the Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy, December 2019. https://www.energy.gov/sites/default/files/2020/02/f72/2019_ssl-energy-savings-forecast.pdf

Response:

Thank you for your comments. The Agency does not disagree that LED alternatives may have energy efficiency cost savings over the life cycle of the product. However, the Agency interprets 10 V.S.A. §7152(a)(6) requiring manufacturers to demonstrate no non-mercury lamp exists at a “cost equal to or better than” a mercury containing lamp, as the cost at *point of sale*. This narrow construction provides a clear and transparent benchmark for manufacturers when providing the demonstration required by 10

V.S.A. §7152(a)(6) without additional factors like energy efficiency, the cost of replacement fixtures, or other broader costs that may be beyond the Agency's expertise in waste management.

The Agency is interested in comparing costs of alternative LED lamps over time, which may result in additional bans on the sale of other mercury-containing lamps.

Comment 7: Submitted by Michael Bender, Director Mercury Policy Project; International Coordinator Zero Mercury Working Group (additional documentation provided with this comment is included with the electronic posting at www.mercvt.org)

Attached please find the comments of the Vermont Public Interest Research Group, Appliance Standards Awareness Project, Responsible Purchasing Network, CLASP and the Mercury Policy Project on the Agency of Natural Resources public comment on its draft determination related to Vermont state law, 10 V.S.A. §7152 (a)(6), which requires that a manufacturer of a mercury-containing lamp shall not sell, offer for sale, or deliver to a retailer for subsequent sale, a mercury-containing lamp unless:

“(6) The manufacturer has demonstrated that no alternative non-mercury energy efficient lamp is available that provides the same or better overall performance at a cost equal to or better than the classes of lamps that the manufacturer proposes to sell.”

In addition to the attached submission, we are also submitting to the DEC the following testimony which was recorded and posted on YouTube earlier this week:

- 1) A record of the hearing testimony on H.500 in the Committee on House Natural Resources, Fish and Wildlife during the 1 pm hearing on Wednesday, January 26, 2022, published on YouTube by the Vermont Legislative Council, see: <https://www.youtube.com/channel/UCPfgnKT1E7u8PPmi40ukMTq/featured>; see: 1-26-2022-03 and 1-26-2022-04***
- 2) Testimony, including talking points, slide and written narrative, provided by the Mercury Policy Project on H.500 to the Committee on House Natural Resources, Fish and Wildlife during the 1 pm hearing on Wednesday, January 26, 2022.***

As the former longtime coordinator, I'm sure you (on behalf of the Agency) can most appreciate the role the Advisory Committee on Mercury Pollution (ACMP) played under its mandate to provide recommendations to the Legislature by January 15th of each year on methods to reduce contamination and health risk of mercury to Vermonters.1[1]

While 2010 was the last year of the ACMP, I can assure you that as a former member of the Committee I took those responsibilities quite seriously as I believe the other members did, including the two legislators and others, including your present and former colleagues at the Agency.

1[1] <https://dec.vermont.gov/waste-management/solid/product-stewardship/mercury/resources/acmp>

As such, I would hope that, you and the Agency, after reading my comments would better understand and appreciate not only the role, but the deliberations of the ACMP in 2010 that led to the drafting, and I believe, legislative intent of S.34 (now Act 36.)

Response:

Thank you for the detailed information provided in your comments. The slides and additional information clearly reflect the dedication and expertise that is evident in the group's efforts to move forward in removing mercury-containing lamps from the environment. The Agency acknowledges your hard work and contribution to Vermont's mercury efforts including legislation and the work of the Advisory Committee on Mercury Pollution over the years.

The staff of the Agency's mercury program facilitated and participated in the ACMP meetings for many years and also took those responsibilities seriously to the point of following the recommendations and directions of the ACMP. The ACMP provided reports, recommendations, and expert testimony to the legislature for around 10 years, which led to the successful mercury programs currently operational in Vermont. While the Agency does not disagree that LED alternatives may have energy efficiency cost savings over the life cycle of the product; "cost" identified in 10 V.S.A. §7152(a)(6) does not specifically indicate the evaluation of cost, beyond cost at point of sale.

The Agency does not disagree that mercury concerns warrant the eventual phase-out of any remaining mercury products where a non-mercury alternative is available at an equivalent price. The Agency is interested in comparing costs of alternative LED lamps over time, which may result in additional bans on the sale of other mercury-containing lamps.