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H.500

Introduced by Representative Sheldon of Middlebury

Referred to Committee on

Date:

Subject: Conservation and development; mercury management; mercury lamps

Statement of purpose of bill as introduced: This bill proposes to prohibit the sale or distribution in the State of compact fluorescent lamps or linear fluorescent lamps beginning on January 1, 2023.

An act relating to prohibiting the sale of mercury lamps in the State

It is hereby enacted by the General Assembly of the State of Vermont:

Sec. 1. 10 V.S.A. § 7101 is amended to read:

§ 7101. LEGISLATIVE FINDINGS

The General Assembly finds and declares that:

(1) Mercury is a persistent and toxic pollutant that bioaccumulates in the environment and poses a serious threat to humans, particularly young children and the developing fetus, and wildlife.

\* \* \*

(7) Human exposure to mercury can result in nervous system, kidney, and liver damage and impaired childhood development.



1           (19) Studies conducted for the ~~State~~ state of Maine show that  
2 manufacturers are beginning to market mercury-free versions of all types of  
3 mercury-added button cell and other miniature batteries.

4           (20) Novelty products using mercury have been banned from sale in  
5 several states.

6           (21) All fluorescent lamps contain mercury and can create an immediate  
7 public health and environmental hazard when they accidentally break during  
8 installation, use, transportation, storage, recycling, or disposal. Light-emitting  
9 diode (LED) replacements for fluorescent lamps do not contain any mercury.

10          (22) Fluorescent lamps are no longer the most energy-efficient lighting  
11 option in the marketplace. Lamps that contain LEDs have advanced  
12 significantly and today use approximately half the electricity as fluorescent  
13 lamps to produce the same amount of light. LEDs also last two to three times  
14 longer than fluorescent lamps.

15          (23) Fluorescent lamps are no longer the least life-cycle cost (LLCC)  
16 option because they cost twice as much to operate compared to an LED. LED  
17 retrofit tubes are the LLCC, and they pay for the slightly higher first cost in a  
18 matter of one to eight months, depending on price and application. After  
19 paying back initial costs, the LED tubes continue to operate for years to come,  
20 saving consumers and businesses on their lighting bills.

1           (24) LED retrofit lamps are widely available in a comprehensive set of  
2           sizes, shapes, lengths, and light colors. There are nearly 12,000 models of  
3           compact LED lamps in the U.S. Environmental Protection Agency’s ENERGY  
4           STAR-certified database. There are over 30,000 models of LED retrofit tubes  
5           that can replace T5, T8, and T12 on the DesignLights Consortium (DLC)  
6           Qualified Product List (QPL) database.

7           (25) Suppliers who sold fluorescent lamps in Vermont after July 1, 2012  
8           made a profit from the sales of those lamps in the State, and they should  
9           remain responsible for ensuring the safe collection at the end-of-life of those  
10          lamps due to the toxic nature of the mercury contained in the products they  
11          sold.

12          (26) Citizens of Vermont, the Vermont environment, and the Agency  
13 will benefit from comprehensive mercury product legislation that further  
14 reduces mercury emissions and is consistent with model mercury product  
15 legislation developed jointly by the northeast states.

16 Sec. 2. 10 V.S.A. § 7102 is amended to read:

17 § 7102. DEFINITIONS

18 As used in this chapter:

19 (1) “Agency” means the Vermont Agency of Natural Resources.

20 (2) “Compact fluorescent lamp” means a compact low-pressure,  
21 mercury-containing, electric-discharge light source in which a fluorescing

1 coating transforms some of the ultraviolet energy generated by the mercury  
2 discharge into visible light, and includes all of the following characteristics:

3 (A) one base or endcap of any type, including screw, bayonet, two  
4 pins, and four pins;

5 (B) integrally ballasted or nonintegrally ballasted;

6 (C) light emission between a correlated color temperature of 1700K  
7 and 24000K and a Duv of +0.024 and -0.024 in the International Commission  
8 on Illumination (CIE) Uniform Color Space (CAM02-UCS);

9 (D) all tube diameters and all tube lengths; and

10 (E) all lamp sizes and shapes for directional and nondirectional  
11 installations (including PL, spiral, twin tube, triple twin, 2D, U-bend, and  
12 circular).

13 (3) “Elemental mercury” means the chemical symbol Hg. Elemental Hg  
14 is a silvery-white liquid (at room temperature) with an atomic number of 80  
15 and an atomic mass of 200.57.

16 ~~(3)~~(4) “Fabricated mercury-added product” means a product that  
17 consists of a combination of individual components that combine to make a  
18 single unit, including mercury-added measuring devices, lamps, and switches.

19 ~~(4)~~(5) “Formulated mercury-added product” means a product that is sold  
20 as a consistent mixture of chemicals to which mercury or a mercury compound  
21 has been intentionally added in order to provide a specific characteristic,

1 appearance, or quality, or to perform a specific function, or for any other  
2 reason. This includes laboratory chemicals, cleaning products, cosmetics,  
3 pharmaceuticals, and coating materials. For the purposes of this chapter,  
4 formulated mercury-added product does not include pharmaceuticals,  
5 pharmaceutical products, biological products, or any substance that may be  
6 lawfully sold over the counter without a prescription under the federal Food,  
7 Drug and Cosmetics Act, 21 U.S.C. §§ 301 et seq. “Biological product” means  
8 a virus, therapeutic serum, toxin, antitoxin, vaccine, blood, blood component  
9 or derivative, allergenic product or an analogous product, or asphenamine (a  
10 derivative of arsphenamine) or any other trivalent organic arsenic compound  
11 used for the prevention, treatment, or cure of a disease or condition of human  
12 beings.

13 ~~(5)(6)~~ “Large appliance” includes the following items: refrigerators,  
14 washing machines, clothes dryers, ranges, water heaters, dishwashers, freezers,  
15 microwave ovens, air conditioners, portable heaters, and other similar domestic  
16 and commercial appliances as may be identified by the Agency by rule.

17 (7) “Linear fluorescent lamp” means a low-pressure, mercury-  
18 containing, electric-discharge light source in which a fluorescing coating  
19 transforms some of the ultraviolet energy generated by the mercury discharge  
20 into visible light, and includes all of the following characteristics:

1           (A) two bases or endcaps of any type, including single-pin, two-pin,  
2           or recessed double contact;

3           (B) light emission between a correlated color temperature of 1700K  
4           and 24000K and a Duv of +0.024 and –0.024 in the International Commission  
5           on Illumination (CIE) Uniform Color Space (CAM02-UCS);

6           (C) all tube diameters, including T2, T5, T8, T10, and T12;

7           (D) all tube lengths from 0.5 to 8.0 feet inclusive; and

8           (E) all lamp shapes, including linear, U-bend, and circular.

9           ~~(6)~~(8)(A) “Manufacturer” means any person, firm, association,  
10          partnership, corporation, governmental entity, organization, combination, or  
11          joint venture that:

12                   (i) produces a mercury-added product; or

13                   (ii) serves as an importer or domestic distributor of a mercury-  
14          added product produced outside the United States.

15           (B) This definition shall not apply to retailers for whom importing is  
16          not their primary business.

17           (C) In the case of a multi-component mercury-added product, the  
18          manufacturer is the last manufacturer to produce or assemble the product.

19           (D) In the case of mercury-containing thermostats, the manufacturer  
20          is the original equipment manufacturer.

1           ~~(7)~~(9) “Mercury-added component” means a mercury-added product  
2 that is incorporated into another product to form a fabricated mercury-added  
3 product, including electrical switches, relays, and lamps.

4           ~~(8)~~(10) “Mercury-added novelty” means a mercury-added product  
5 intended mainly for personal or household enjoyment or adornment. Mercury-  
6 added novelties include items intended for use as practical jokes, figurines,  
7 adornments, toys, games, cards, ornaments, yard statues and figures, candles,  
8 jewelry, holiday decorations, items of apparel ~~(, including footwear)~~, and  
9 similar products.

10           ~~(9)~~(11) “Mercury-added product” means a product, a commodity, a  
11 chemical, a product with one or more components, or a product that cannot  
12 function without the use of that component, that contains mercury or a mercury  
13 compound intentionally added to the product, commodity, chemical, or  
14 component in order to provide a specific characteristic, appearance, or quality,  
15 or to perform a specific function, or for any other reason. These products  
16 include formulated mercury-added products and fabricated mercury-added  
17 products.

18           ~~(10)~~(12) “Mercury fever thermometer” means a mercury-added product  
19 that is used for measuring body temperature. This does not include a fever  
20 thermometer with a mercury-added button cell battery.



1           ~~(11)~~(13) “Motor vehicle” means a vehicle propelled by an internal  
2           combustion engine or an electric motor, such as an automobile, van, truck,  
3           motorized construction equipment, motorized recreational vehicle, motorcycle,  
4           or forklift.

5           ~~(12)~~(14) “End-of-life motor vehicle” means a motor vehicle that has not  
6           been intentionally flattened, crushed, shredded, or baled if sold, given, or  
7           otherwise conveyed to a motor vehicle recycler or scrap metal recycling  
8           facility for the purpose of recycling.

9           ~~(13)~~(15) “Mercury-added vehicle switch” means a capsule, commonly  
10          known as a bullet, containing mercury, that is part of a convenience light  
11          switch assembly for motor vehicle trunks and hoods or is part of the anti-lock  
12          brake system.

13          ~~(14)~~(16) “Motor vehicle recycler” means an individual or entity engaged  
14          in the business of acquiring, dismantling, parts recycling, or destroying six or  
15          more end-of-life motor vehicles in a year.

16          ~~(15)~~(17) “Scrap metal recycling facility” means a facility at a fixed  
17          location that uses equipment to process and refabricate scrap metal into  
18          prepared grades and principally produces scrap iron, steel, or nonferrous  
19          metallic scrap for sale.

20          ~~(16)~~(18) “Mercury-containing thermostat” means a product or device  
21          that uses a mercury switch to sense and control room temperature through

1 communication with heating, ventilating, or air-conditioning equipment.  
2 “Mercury-containing thermostat” includes thermostats used to sense and  
3 control room temperature in residential, commercial, industrial, and other  
4 buildings but does not include a thermostat used to sense and control  
5 temperature as part of a manufacturing process.

6 ~~(17)~~(19) “Person” means any individual, corporation, partnership,  
7 cooperative, association, firm, sole proprietorship, governmental agency, or  
8 other entity.

9 ~~(18)~~(20) “Thermostat retailer” means a person who sells thermostats of  
10 any kind directly to homeowners or other nonprofessionals through any selling  
11 or distribution mechanism, including sales using the Internet or catalogues. A  
12 retailer may also be a wholesaler if it meets the definition of wholesaler.

13 ~~(19)~~(21) “Thermostat wholesaler” means a person that is engaged in the  
14 distribution and wholesale sale of heating, ventilation, and air-conditioning  
15 components to contractors who install heating, ventilation, and air-  
16 conditioning components.

17 Sec. 3. 10 V.S.A. § 7105 is amended to read:

18 § 7105. RESTRICTIONS ON THE SALE AND USE OF CERTAIN

19 MERCURY-ADDED PRODUCTS

20 \* \* \*

1 (f) Mercury switches and relays. Effective January 1, 2007, no mercury  
2 switch or mercury relay, individually or as a product component, may be  
3 offered for final sale, sold at a final sale, or distributed in Vermont as a new  
4 manufactured product. This subsection does not apply to the sale of a mercury  
5 switch or mercury relay if the manufacturer provides satisfactory  
6 documentation that the use of the switch or relay is a federal requirement.

7 (g) Fluorescent lamps. Beginning on January 1, 2023, no compact  
8 fluorescent lamp or linear fluorescent lamp may be offered for final sale, sold  
9 at final sale, or distributed in Vermont as a new manufactured product.

10 (h) Exclusion for existing equipment. The prohibitions in subsections (e)  
11 and (f) of this section do not apply if the switch, relay, or measuring device is  
12 used to replace a switch, relay, or measuring device ~~which~~ that is a component  
13 of a larger product in use prior to January 1, 2007, provided the owner of that  
14 equipment has made every reasonable effort to determine that no compatible  
15 nonmercury replacement component exists.

16 ~~(h)~~(i) Exemptions.

17 \* \* \*

18 (7) The prohibition in subsection (g) of this section shall not apply to the  
19 following compact fluorescent lamps and linear fluorescent lamps:

1           (A) lamps used for image capture and projection, including  
2           photocopying, printing directly or in pre-processing, lithography, film and  
3           video projection, and holography;

4           (B) lamps that have high proportions of ultraviolet light emission,  
5           including only the following:

6                   (i) lamps with high ultraviolet content that have ultraviolet power  
7                   >2 milliwatts per kilolumen (mW/klm):

8                   (ii) lamps for germicidal use or destruction of DNA that emit a  
9                   peak radiation of approximately 253.7 nanometers;

10                   (iii) lamps used for disinfection or fly trapping where the radiation  
11                   power emitted is between 250–315 nanometers represents  $\geq 5$  % or is between  
12                   315–400 nanometers represents  $>20$  % of the total radiation power emitted is  
13                   between 250–800 nanometers;

14                   (iv) lamps used for the generation of ozone where the primary  
15                   purpose is to emit radiation at approximately 185.1 nanometers;

16                   (v) lamps used for coral zooxanthellae symbioses where the  
17                   radiation power emitted between 400–480 nanometers represents  $>40$  % of  
18                   total radiation power emitted is between 250–800 nanometers; and

19                   (vi) lamps used for sun-tanning beds where the radiation power  
20                   emitted is between 250–400 nanometers represents  $\geq 80$  % of the total radiation  
21                   power emitted is between 250–800 nanometers.

1       Sec. 4. TRANSITION; COLLECTION AND DISPOSAL OF MERCURY-  
2                                   CONTAINING LAMPS

3           (a) Notwithstanding the prohibition on the sale of compact fluorescent  
4           lamps or linear fluorescent lamps under 10 V.S.A. § 7105, a manufacturer of a  
5           mercury-containing lamp remains required to implement the collection plans  
6           required under 10 V.S.A. chapter 164a for free collection of mercury-  
7           containing lamps from covered entities in the State.

8           (b) Beginning on January 15, 2023 and annually thereafter, the Secretary of  
9           Natural Resources shall provide written testimony to the House Committee on  
10          Natural Resources, Fish, and Wildlife and the Senate Committee on Natural  
11          Resources and Energy regarding whether the requirements of 10 V.S.A.  
12          chapter 164a regarding the collection and disposal of mercury-containing  
13          lamps should be repealed by the General Assembly.

14       Sec. 5. EFFECTIVE DATE

15           This act shall take effect on July 1, 2022.