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**Report to the Joint Standing Committee on  
the Environment and Natural Resources**

# **Annual Product Stewardship Report**

**February 2023**

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### APPENDIX A - Comments received on Posted Report

## I. Introduction

This report is prepared in accordance with Maine’s *Product Stewardship Law*, 38 M.R.S. §§ 1771-1776, which directs the Department of Environmental Protection (“Department”) to develop an annual report for the Legislature evaluating Maine’s product stewardship programs. Product stewardship is a public policy approach that can minimize the negative impacts of products and packaging throughout their lifecycles. Manufacturers (a.k.a. producers) have the greatest influence over the life-cycle impacts of their products, starting with material sourcing and design; the choices of distributors, retailers and consumers also have an impact. Product stewardship laws that mandate some level of manufacturer (producer) responsibility for proper product management at the end-of-life are known as extended producer responsibility (“EPR”) laws. EPR provides incentive for manufacturers to consider the end-of-life impacts of their products and relieves the public sector of some of the burden of managing those products. Maine currently has eleven product stewardship laws related to the end-of-life management of specific consumer products.

This report provides the Joint Standing Committee on the Environment and Natural Resources (“ENR Committee”) with information concerning the performance of Maine’s current product stewardship programs, as well as candidate products for future consideration. Maine’s Product Stewardship framework law requires the Department to solicit and collect public comments on the content of the report for 30 days prior to submittal to the Legislature, and to append all comments received to the report.

## II. Existing programs’ performance and recommendations

Maine’s existing product stewardship programs are listed in chronological order.

### A. Container redemption (“Bottle Bill,” 1978) – 38 M.R.S. §§ 3101-3119

Maine’s *Manufacturers, Distributors, and Dealers of Beverage Containers*, a.k.a. the “Bottle Bill” has been under the purview of the Department since November 1, 2015. The program had been overseen by the Department of Agriculture since its enactment in 1976.

In 2019, the legislature enacted three bills making changes to the State’s container redemption laws in response to a May 2018 report by the Office of Program Evaluation and Government Accountability (“OPEGA”). Detail on these changes can be found in the [2020 Product Stewardship report](#). In addition, changes recommended by the Department were ultimately passed by the legislature and approved by the Governor in June of 2021 as part of [LD 1635, An Act To Make Minor Changes and Corrections to Statutes Administered by the Department of](#)

*Environmental Protection.*<sup>1</sup> The Department is continuing to act on remaining OPEGA recommendations and implement recent changes to legislation.

2020 Container Redemption Tons			
Plastics	Glass	Metals	Total
8,532 <sup>2</sup>	29,377	4,849	42,758

Overall, the Bottle Bill program has faced some challenges during the pandemic but remains a successful collection program with estimated recovery rates in the 75 to 87% range,<sup>3</sup> well above Maine's overall statewide recycling rate of 36.5%<sup>4</sup> and the national recycling rate of 34.7%. "Bottle Bill" program businesses (redemption centers, pickup agents, etc.) have been impacted by the labor issues plaguing the entire service industry during the COVID-19 pandemic. Additionally, the recent increase to Maine's minimum wage has also impacted these businesses.

### **B. Lead-acid batteries (1989) – 38 M.R.S. § 1604**

Lead acid battery disposal has been regulated since 1989. 38 M.R.S. § 1604 bans the disposal of lead-acid batteries by burial, incineration, deposit or dumping. It also requires all sellers of lead acid batteries to accept used lead-acid batteries from customers purchasing a new lead acid battery. If the customer is not returning a used lead-acid battery at the time of purchase, the retailer must collect a \$10 dollar deposit and refund that deposit if the customer returns with a used lead-acid battery within 30 days. Wholesalers of batteries must then collect used batteries from retailers. Additionally, the law requires the posting of signage at retail outlets informing the public of the state law and its requirements.

Numerous other states have similar programs for lead-acid batteries, and the collection and recycling of lead-acid batteries is considered a success. Lead-acid batteries are America's most recycled consumer product, with a national recycling rate of 99%.<sup>5</sup>

### **C. Rechargeable batteries (1991) – 38 M.R.S. § 2165**

*Regulation of certain dry-cell batteries*, 38 M.R.S. § 2165 was enacted in 1991, and requires manufacturers of nickel cadmium and small sealed lead acid batteries to provide a system for the recycling of their batteries. The program is implemented in Maine by Call2Recycle on behalf of the manufacturers. Until mid-2017, Call2Recycle offered a free rechargeable battery recycling

<sup>1</sup> See <http://legislature.maine.gov/doc/4785> for list of Agency and Department bills.

<sup>2</sup> Plastic tonnage total includes 154 tons of plastic film generated during collected.

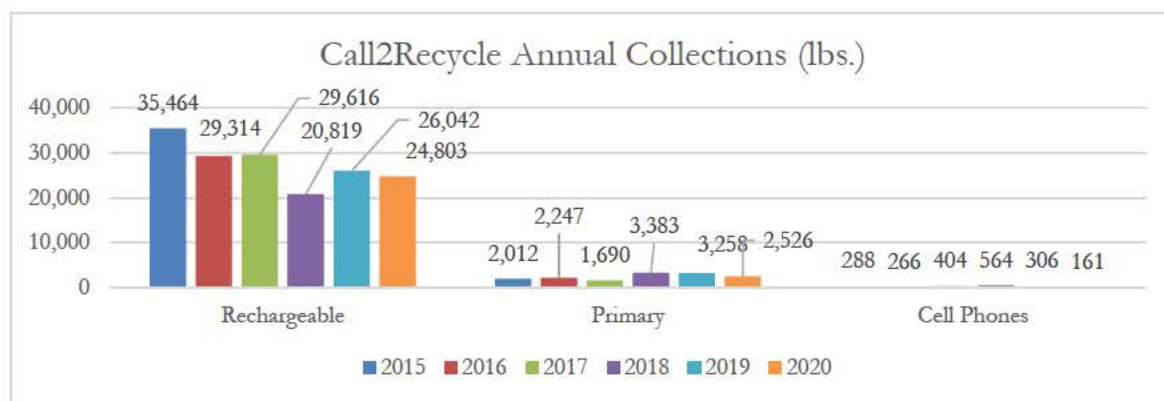
<sup>3</sup> OPEGA No. SR-BOTTLE -17, *Maine's Beverage Container Redemption Program—Lack of Data Hinders Evaluation of Program and Alternatives; Program Design Not Fully Aligned with Intended Goals; Compliance, Program Administration, and Commingling Issues Noted*, May 2018 (<http://legislature.maine.gov/doc/2316>).

<sup>4</sup> Based on available data, Maine's estimated MSW recycling rate averaged 36.56% in 2018 and 2019, down slightly from 38.09% in 2017.

<sup>5</sup> *National Recycling Rate Study*. SmithBucklin Statistics Group, Chicago Illinois. November 2019 ([BCI\\_482347-20\\_2019-Study.pdf \(ymaws.com\)](https://www.ymaws.com/BCI_482347-20_2019-Study.pdf)).

program to any business, government entity, or retail location interested in acting as a collection location. However, due to increases in “free riders,” i.e., collection of batteries produced by manufacturers that do not financially support the program, Call2Recycle now limits participation in its free rechargeable battery recycling program to municipal collection sites and certain national retail chains.

Call2Recycle collected 24,803 pounds of rechargeable batteries in Maine in 2020. In addition, Call2Recycle collected 2,526 pounds of primary batteries and 161 pounds of cell phones in its boxes. Batteries collected through the program are sorted by chemistry and sent to appropriate processing facilities for extraction of materials to use in new products. Cell phones are either refurbished and resold or recycled.



While the law only requires that two specific rechargeable battery chemistries be covered by the manufacturer-sponsored program, Call2Recycle accepts all chemistries of dry-cell rechargeable batteries up to 11 pounds and cellphones. Primary batteries are not required to be recycled by Maine’s law, nor are they accepted in the Call2Recycle program. However, primary batteries still end up in the Call2Recycle collection boxes each year. Thus, while most of the resources contained in primary batteries are lost to disposal, when recycled, these batteries also burden the existing collection program as the manufacturers of primary batteries do not contribute funds to the program. Products from which rechargeable batteries cannot be removed are also not required to be recycled by this law,<sup>6</sup> nor are they collected through the program. Not only are the resources associated with these batteries lost when they are not recycled, the increasingly popular lithium-ion batteries were responsible for at least 245 fires nationwide during materials

<sup>6</sup> While not required to be recycled under 38 M.R.S. 2165, the sale of products with batteries that cannot be easily removed by the consumer in products used primarily for personal, family, or household purposes is prohibited pursuant to 38 M.R.S. 2166 “Rechargeable Consumer Products”. It also requires that the battery, the product, and product packaging be labeled with the battery’s electrode type and a message about the need for proper disposal. This law is not enforced; were it to be enforced a great number of consumer products would cease to be sold in the State.

management handling between 2013 and 2020.<sup>7</sup> These batteries generally enter materials management streams embedded in products. For these reasons the Department has recommended expanding the scope of this program multiple times, and other U.S. jurisdictions are enacting legislation with a broader program scope.<sup>8</sup>

The federal government has also taken an interest in battery recycling of late, driven by the country's increasing reliance on battery technology and concerns over the critical mineral<sup>9</sup> supplies essential to battery production.<sup>10</sup> A 2021 report by the Federal Consortium for Advanced Batteries (FCAB), which is led by the Departments of Energy, Defense, Commerce, and State, found that the United States is heavily reliant on foreign sources of batteries and critical materials and risks long-term dependence on these external sources without a concentrated focus on shoring up domestic supply and processing capacity.<sup>11</sup> Additional reasons to lessen our reliance on foreign supplies of these minerals include supply chains fraught with human rights concerns<sup>12</sup> and environmentally detrimental mining practices.<sup>13</sup>

The Department is not recommending any updates to the battery stewardship law in this year's report because there has been significant activity on battery recovery at the federal level. The Infrastructure Investment and Jobs Act<sup>14</sup> of 2021 includes a number of provisions aimed at advancing battery recycling. Most relevant among them is the establishment of a task force to develop a framework for an EPR program for batteries that will:

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<sup>7</sup> United States Environmental Protection Agency, "An Analysis of Lithium-ion Battery Fires in Waste Management and Recycling", July 2021, [https://www.epa.gov/system/files/documents/2021-08/lithium-ion-battery-report-update-7.01\\_508.pdf](https://www.epa.gov/system/files/documents/2021-08/lithium-ion-battery-report-update-7.01_508.pdf).

<sup>8</sup> The Department recommended expanding the scope of 38 MRS §2165 in its products stewardship report in 2011, 2017, 2019, and 2020. Other U.S. jurisdictions with product stewardship laws covering a broader scope of batteries include Vermont, which enacted a primary battery stewardship law in 2014 and Washington DC, which enacted a battery stewardship law covering rechargeable and primary batteries, including those embedded in products, in 2021.

<sup>9</sup> The term 'critical material or mineral' means a material or mineral that serves an essential function in the manufacturing of a product and has a high risk of a supply disruption, such that a shortage of such a material or mineral would have significant consequences for U.S. economic or national security.

<sup>10</sup> The Department of Energy has identified aluminum (bauxite), antimony, arsenic, barite, beryllium, bismuth, cesium, chromium, cobalt, fluor spar, gallium, germanium, graphite (natural), hafnium, helium, indium, lithium, magnesium, manganese, niobium, platinum group metals, potash, the rare earth elements group, rhenium, rubidium, scandium, strontium, tantalum, tellurium, tin, titanium, tungsten, uranium, vanadium, and zirconium as critical materials. Final List of Critical Minerals 2018, U.S. Department of the Interior, 83 Fed. Reg. 23295, 2018, <https://www.govinfo.gov/content/pkg/FR-2018-05-18/pdf/2018-10667.pdf>.

<sup>11</sup> Federal Consortium for Advanced Batteries. (2021). *Executive summary: National blueprint for lithium batteries, 2021-2030*. [https://www.energy.gov/sites/default/files/2021-06/FCAB%20National%20Blueprint%20Lithium%20Batteries%200621\\_0.pdf](https://www.energy.gov/sites/default/files/2021-06/FCAB%20National%20Blueprint%20Lithium%20Batteries%200621_0.pdf).

<sup>12</sup> World Economic Forum (2021). *Making mining safe and fair*. [https://www3.weforum.org/docs/WEF\\_Making\\_Mining\\_Safe\\_2020.pdf](https://www3.weforum.org/docs/WEF_Making_Mining_Safe_2020.pdf).

<sup>13</sup> Kosiorek, et. al., "Effect of cobalt on environmental and living organisms – a review", *Applied Ecology and Environmental Research* 17(5):11419-11449. [http://dx.doi.org/10.15666/aecer/1705\\_1141911449](http://dx.doi.org/10.15666/aecer/1705_1141911449).

<sup>14</sup> See: *Infrastructure Investment and Jobs Act of 2021*, Public Law No: 117-58. <https://www.congress.gov/bill/117th-congress/house-bill/3684/>.

- address battery recycling goals, cost structures for mandatory recycling, reporting requirements, product design, collection models, and transportation of collected materials;
- provide sufficient flexibility to allow battery producers to determine cost-effective strategies for compliance with the framework; and
- outline regulatory pathways for effective recycling.

The task force will be looking at a broad scope of batteries – including primary, rechargeable, and those embedded in products – and will report out within one year of being established.<sup>15</sup>

The federal government will also report out in one year's time on existing secondary use and recycling options for large scale batteries used in cars and energy storage<sup>16</sup> and in two years' time on best practices for battery recycling and labeling.<sup>17</sup> Other key elements of the legislation include grants for lithium-ion battery recycling to support innovative methods in collecting, sorting, and transporting lithium-ion batteries, both large and small<sup>18 19</sup> and grants to improve domestic processing and recycling of large and small scale batteries.<sup>20</sup> Given this extensive activity and the scope of information that will be available to inform decision-making in just a few years' time, any immediate action to change our laws that relate to battery management would be premature.

#### **D. Mercury auto switches (2003) – 38 M.R.S. § 1665-A**

38 M.R.S. § 1665-A was enacted in 2001 and the program began in 2003. The original law prohibited the sale of new motor vehicles with mercury switches, required that mercury switches and headlamps be removed before a motor vehicle is crushed, and required motor vehicle manufacturers to pay for both the recycling of mercury auto switches and a \$1 bounty to the collector for each switch. In September of 2005, the bounty was increased briefly to \$3 then to \$4 per switch. Since 2003, more than 165 pounds of mercury has been collected through the program, which amounts to about 25% of that estimated to have been present in the auto stock when the program began.

Complete 2021 numbers are not yet available, but 1472 switches were collected during the first three quarters of 2021, nearly double the 2020 total. Switches are returned in relatively large

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<sup>15</sup> See: *Infrastructure Investment and Jobs Act of 2021*, Public Law No: 117-58, p 542. <https://www.congress.gov/bill/117th-congress/house-bill/3684/>.

<sup>16</sup> Ibid, p. 543

<sup>17</sup> Ibid, p. 833

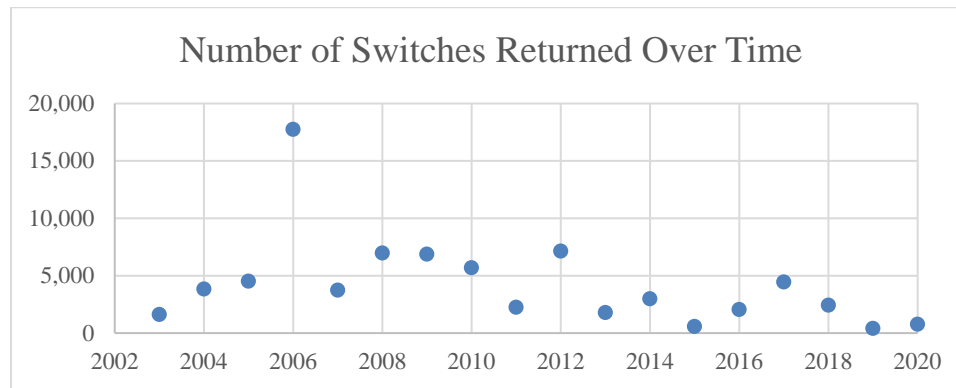
<sup>18</sup> Small lithium-ion batteries are common in household electronics; larger lithium-ion batteries are increasingly used in electric vehicles and energy storage applications.

<sup>19</sup> See: *Infrastructure Investment and Jobs Act of 2021*, Public Law No: 117-58, p 539. <https://www.congress.gov/bill/117th-congress/house-bill/3684/>.

<sup>20</sup> Ibid, p. 541



quantities from relatively few participants, which can lead to variability in collection numbers from year to year. Department staff contact with participants whose switches are due or overdue appear to increase returns.



The 2003 prohibition on the inclusion of mercury switches in new vehicles means the number of available switches is decreasing. Statute directs the Department to recommend repeal of the program once the Commissioner determines that the number of mercury switches is too small to warrant continued collection. In recent years the Department has been evaluating available data on the actual number of switches that remain. The best available data appears to be data from the Maine Department of Transportation on the model year of registered vehicles. This data suggests there is still a substantial amount of mercury to collect.<sup>21</sup>

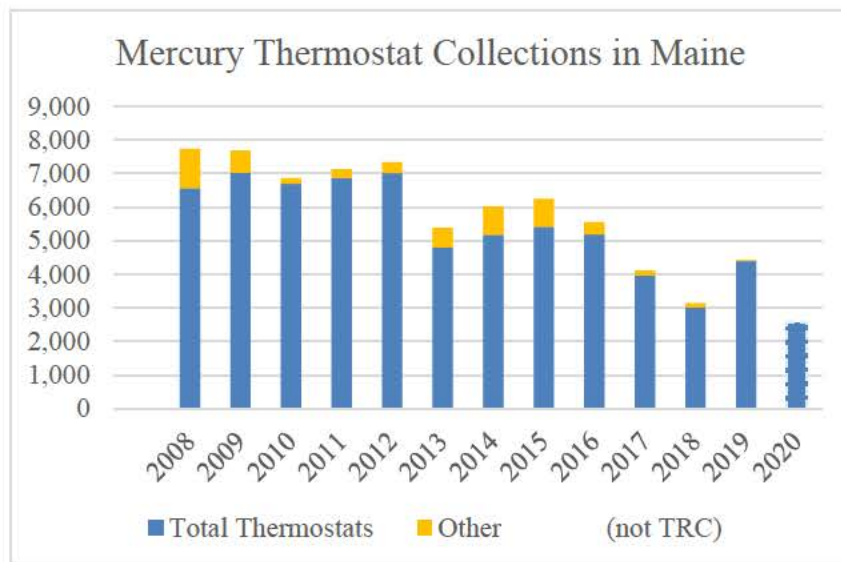
The National Vehicle Mercury Switch Recovery Program (“NVMSRP”), the organization set up by obligated manufacturers to realize their responsibilities under this and similar laws, was due to end voluntary collection in states without current product stewardship laws at the end of 2021. NVMSRP had been uncertain of its funding post-2022, when arrangements for the continued payment of General Motor’s old share (prior to General Motor’s bankruptcy in 2009) were expected to conclude. General Motor’s share encompassed nearly half of all mercury switches. Fortunately, the End of Life Vehicle Association (“ELVS”), which runs NVMSRP, and the Steel Manufacturers Association have reached an agreement that will provide for the continuation of all services currently offered through July 1, 2027.<sup>22</sup> Given this commitment by the steel and auto manufacturers, there appears to be no reason to discontinue Maine’s program at any point during that timeframe.

<sup>21</sup>This data shows that, in 2020, over 193,000 vehicles – approximately 16% of vehicles registered – were old enough to contain mercury switches; this data omits any vehicles that are not registered because they are not being actively used: those in junk yards, dealerships, or abandoned in back lots. The average switch has approximately one gram of mercury and, while not present in all vehicles, a single vehicle can have as many as three switches.

<sup>22</sup> See the August 2021 joint press release by ELVS and the Steel Manufacturers Association, available here: <https://elvsolutions.org/wp-content/uploads/2021/09/ELVS-agreement-August-27-2021-one-pager-signed.pdf>

### E. Mercury thermostats (2005) - 38 M.R.S. § 1665-B

Maine’s mercury thermostat program, enacted in 2005, established EPR for the collection and recycling of mercury-added thermostats. For the first two years, the program required manufacturers to fund collection and recycling of mercury-added thermostats. Due to low initial collection numbers, a \$5 incentive payment for every mercury thermostat returned was incorporated into the law beginning in 2007.



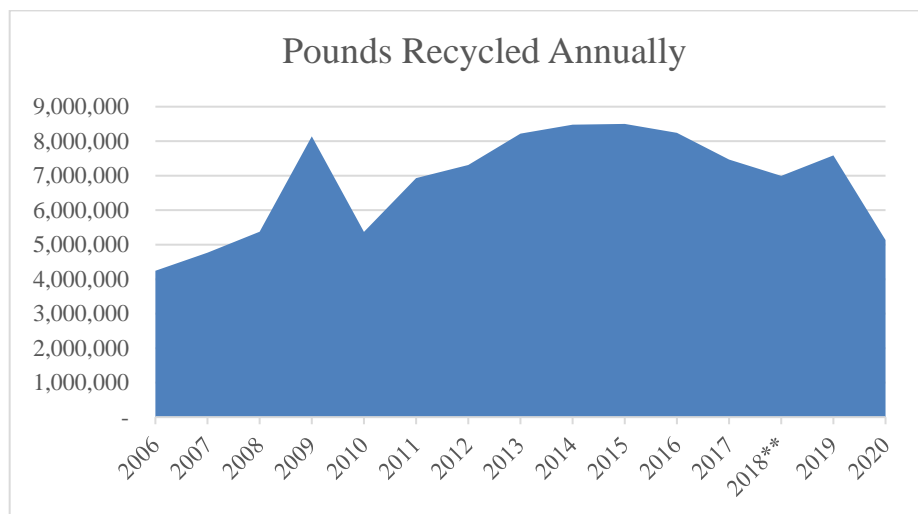
An estimated 2,586 mercury thermostats were collected in 2020 by the Thermostat Recycling Corporation (“TRC”). While 2020 collections were down 41% from 2019, preliminary data retrieved from TRC’s real-time reporting system shows that 2021 collections will be higher, with around 3,858 mercury thermostats collected as of mid-December.

TRC annually conducts outreach to Maine collection locations that have not returned their mercury thermostat bin within the past year including a “miss you” mailing campaign to reach any past-due collection locations that could not be targeted by a direct phone call or an in-person technical assistance visit. In 2020, TRC conducted 52 site visits and placed 191 “miss you” calls to collection sites in Maine. TRC also conducted an education and outreach campaign in Maine using online, print, and radio outlets to help raise public awareness of the mercury thermostat recycling program.

### F. Electronic waste (2006) - 38 M.R.S. § 1610

Maine’s electronic waste (“e-waste”) program has facilitated the recycling of printers, televisions, interactive entertainment computers, and other devices with screens of at least four inches measured diagonally since 2006. Through 2020, over 100 million pounds of covered

electronic devices had been recycled through the program. Returns during 2020 were down 33%, likely due to collection disruptions associated with COVID-19.



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During 2021, the Department’s work on e-waste has included adjusting consolidator reporting to improve transparency,<sup>24</sup> assisting municipalities and individuals affected by the closure of a large player in Maine’s e-waste recycling landscape,<sup>25</sup> and assisting to facilitate new collection options given the continued movement away from one-day collection events by the State’s remaining consolidators. The move from one-day collection events is largely due to inefficiencies inherent with hosting an event in which the amount of material that will be brought is unknown. Having excessive capacity at an event wastes resources on the part of the hosts and consolidators and having insufficient capacity can lead to environmentally detrimental outcomes when people are turned away.

The state would benefit from additional consolidators and aims to facilitate the entry of additional consolidators through adjustments to the e-waste rules. The Department has been

<sup>23</sup> \*\*The total pounds recycled in 2018 includes an estimate of the number of pounds likely recycled by one consolidator, E-waste Recycling Solutions (ERS). ERS went out of business in April 2019. There is no evidence that it slowed collection before that point – any entities ERS stopped servicing would have been in touch with the Department and/or other consolidators looking for a new pick up agent. Unfortunately, ERS didn’t send its report on collection from the second half of 2018. While uncertain, the estimation was figured using the following logic. If one assumes that ERS’s market share was the same in the second half of 2018 as it was in the first (35%), and that the North Coast Service (“NCS”) market share of 47% also remained unchanged, ERS would have recycled 1,763,280 pounds. If one assumes that ERS’s market share was the same in the second half of 2018 as it was in the first (35%), and that the Electronics End (“EE”) market share of 13% also remained unchanged, ERS would have recycled 1,491,130 pounds. If one takes the mean of the two estimates and rounds to significant figures, this results in approximately 1.6 million pounds.

<sup>24</sup> Consolidators are now providing information on covered entities serviced. The Department is working on using the State’s universal bill of lading system to verify this information.

<sup>25</sup> The owners of Electronics End (“EE”) retired in January 2021. EE had serviced some of the more rural parts of the state as an e-waste consolidator since 2012.

working to revise the rules ([e-waste/rules/06/096/096c415.docx](#)) associated with this statute. This effort has included ongoing communications with stakeholders.

### **G. Cellular telephones (2008) – 38 M.R.S. § 2143**

Maine’s cellular telephone recycling law requires any retailer selling cellular phones to accept used cellular telephones at no charge from any person, and to post signage stating this requirement.

As used cellular telephones are a valuable commodity, the Department responds to complaints instead of actively monitoring compliance with this law. The Department has only received one complaint in recent years from a person who was refused cell phone take back by a retailer. The Department will continue to post information about [cell phone recycling on its website](#) and respond to any complaints as needed.

### **H. Mercury-added lamps (2011) - 38 M.R.S. § 1672**

Maine’s mercury-added lamp law was enacted in 2011. It was amended in 2019 by P.L. 2019, ch. 286 - *An Act To Implement Recommendations of the Department of Environmental Protection Regarding the State's Mercury-added Lamp Law* to remove language restricting the program to residential bulbs, in addition to other changes described in more detail in the [2020 Product Stewardship Report](#). The law, which requires manufacturers to collect and recycle any lamp to which mercury has been added<sup>26</sup>, is implemented by the National Electrical Manufacturers Association (“NEMA”) on behalf of manufacturers. NEMA’s program provides free containers, shipping, and recycling services to voluntarily participating retail and municipal collection sites. The law limits free non-Compact Fluorescent Lamp (“CFL”) drop-offs to ten per person per visit. Additional lamps must be managed separately by the collection site. The cap does not apply to CFLs, which may be dropped off in any quantity provided a collection location has the capacity to accept them.

Based on sales data and average lifespan, NEMA estimated that approximately 1,347,912 mercury-added lamps sold to residents<sup>27</sup> in Maine would be coming out of service and therefore available for collection in 2020; approximately 256,852 mercury-added lamps were collected. This equates to approximately 19.1% of available lamps and represents a 6% increase in the percentage of available lamps collected over the previous year. An estimated 69,846 mercury-

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<sup>26</sup> The definition of covered lamps is as follows: "Mercury-added lamp" means an electric lamp to which mercury is intentionally added during the manufacturing process, including, but not limited to, linear fluorescent, compact fluorescent, black light, high-intensity discharge, ultraviolet and neon lamps.

<sup>27</sup> Although the mercury lamp law was amended in 2019 and is no longer restricted to residents, the 2020 annual report from NEMA contained an estimated for available mercury lamps from residential sales only. The Department will follow up with NEMA to address this data gap in future reports.

added lamps from residents were collected outside of the stewardship program through Household Hazardous Waste (“HHW”) and municipal collections in Maine, resulting in overall collection of approximately 326,663 mercury-added lamps in 2020.



Uncertainties in the data used to calculate estimated available lamps include variations in lamp lifecycle or storage of unused or spent lamps, which people likely accumulate before bringing in for recycling. However, as shown in the graph above, there has been a fairly consistent gap between the number of lamps estimated to be coming out of service and the number of mercury-added lamps collected over the duration of the program. This suggests that a significant percent of the mercury-added lamps coming out of service may be improperly disposed of in the trash rather than recycled. A recent report from the Clean Lighting Coalition<sup>28</sup> estimated that, across the United States, “fluorescent lamps discarded in 2020 contained more than four metric tons of mercury, of which more than 75% were not recycled or safely disposed.”<sup>29</sup>

Concerns over mercury pollution have led to recent calls from around the globe to begin phasing out mercury-added lamps. Similar to lead, mercury is a “non-threshold toxin” with no safe exposure level; even a very low concentration exposure can “exert toxic effects.”<sup>30</sup> Mercury regulations around the globe typically exempt mercury-containing lamps in their mercury

<sup>28</sup> The Clean Lighting Coalition is a global partnership focused on the health and environmental benefits of eliminating mercury-based lighting under the Minamata Convention on Mercury.

<sup>29</sup> Clean Lighting Coalition (2021). *Mercury in Fluorescent Lighting: Unnecessary Health Risks & Actionable Solutions*. [https://cleanlightingcoalition.org/wp-content/uploads/sites/96/Mercury-in-Fluorescent-Lighting\\_FINAL-1.pdf](https://cleanlightingcoalition.org/wp-content/uploads/sites/96/Mercury-in-Fluorescent-Lighting_FINAL-1.pdf)

<sup>30</sup> Rahman Z, Singh VP. The relative impact of toxic heavy metals (THMs) (arsenic (As), cadmium (Cd), chromium (Cr)(VI), mercury (Hg), and lead (Pb)) on the total environment: an overview. *Environ Monit Assess*. 2019 Jun 8;191(7):419. doi: 10.1007/s10661-019-7528-7. PMID: 31177337.

product bans, as is the case in Maine,<sup>31</sup> as well as in Vermont,<sup>32</sup> which has a [mercury-added lamp program](#) that closely aligns with Maine's. When Maine's mercury-added lamp stewardship law was enacted in 2011, mercury-added lamps were significantly less expensive than light-emitting diodes ("LEDs") and more energy efficient than the cost-comparable (at the time) incandescent lamps. A key factor in the global calls to action for phasing out mercury-added lamps is that LEDs are now widely available at a cost comparable to mercury-added lamps. LEDs are also more energy efficient than fluorescent lamps, lasting 3-5 times longer, and emitting very little heat. In contrast, fluorescent lamps "release about 80% of their energy as heat," only slightly better than the 90% of energy released by incandescent lamps.<sup>33</sup>

Existing lighting fixtures that do not easily or efficiently accept LEDs are one impediment to a transition away from mercury-added lamps. While data is lacking regarding residential transitions to LED lighting, information from Efficiency Maine indicates that many nonresidential entities in Maine have already transitioned from mercury-added lamps to LEDs. Through a series of interviews with nonresidential stakeholders including "three distributors, five contractors, and one manufacturer," an analysis conducted for Efficiency Maine concluded that "there is 25 to 50% of building area left to convert to LEDs" in the commercial and industrial (C&I) sector in Maine.<sup>34</sup> In addition to conversions in the C&I sector, according to Efficiency Maine, "K-12 participation in the Efficiency Maine commercial lighting solutions has been robust over the last six years (See [State of Commercial & Industrial Lighting in Maine – 2021 Update](#)) and with similar program participation over the next three fiscal years as anticipated in the [Triennial Plan](#), fluorescent lighting will be significantly reduced. Due to Maine's energy code, new school construction has shifted to only LED lamps. Efficiency Maine does not offer any incentives for new construction lighting projects, as LEDs have become the baseline."

According to the Clean Lighting Coalition report referenced earlier, "major advances in LED technology" mean that "mercury-free LED lamps can cost-effectively replace fluorescents in virtually all applications."<sup>35</sup> On December 28, 2021, the Vermont Agency of Natural Resources ("ANR") recently concluded that screw based LED lamps provide the same or better overall

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<sup>31</sup> Maine's *Restrictions on sale and use of mercury law*, [38 M.R.S. §1661-C](#), prohibits the sale of mercury-added products unless a system exists for the proper collection, transportation and processing of the product at the end of its life, and if the product provides a net benefit to the environment, public health or public safety when compared to available nonmercury alternatives; or if technically feasible nonmercury alternatives are not available at comparable cost.

<sup>32</sup> Vermont law 10 VSA §7152(a)(6) requires the following criterion be met in order to sell mercury-added lamps in Vermont: "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".

<sup>33</sup> Energy.gov. (n.d.). *Energy saver*. <https://www.energy.gov/energysaver/led-lighting>.

<sup>34</sup> Ridgeline Energy Analytics. (2021). *State of Commercial & Industrial Lighting in Maine – 2021 Update*. [https://www.energymaine.com/docs/E-2\\_State-of-CI-Lighting-in-Maine\\_2021-Update.pdf](https://www.energymaine.com/docs/E-2_State-of-CI-Lighting-in-Maine_2021-Update.pdf).

<sup>35</sup> Clean Lighting Coalition (2021). *Mercury in Fluorescent Lighting: Unnecessary Health Risks & Actionable Solutions*. [https://cleanlightingcoalition.org/wp-content/uploads/sites/96/Mercury-in-Fluorescent-Lighting\\_FINAL-1.pdf](https://cleanlightingcoalition.org/wp-content/uploads/sites/96/Mercury-in-Fluorescent-Lighting_FINAL-1.pdf).

performance at a cost equal to or better than that of a mercury-containing compact fluorescent (“CFL”) lamp and that other replacement lamps are not available at a cost equal to or better than mercury containing lamps.<sup>36</sup> Vermont ANR issued their draft decision for public comment, and, if finalized, would prohibit the sale of screw based mercury containing CFL lamps one year after finalization.

In addition to activity in the region, global efforts to phase out mercury-added lamps have increased. The United Nations Environment Program’s (“UNEP”) Global Mercury Policy Project recently partnered with the Clean Lighting Coalition to host a webinar about the global initiatives to phase out mercury-added lamps, highlighting the array of cost-effective mercury-free lighting options as well as the toxicity of mercury and environmental and public health benefits of reduced use.<sup>37</sup> The Clean Lighting Coalition has also issued recommendations that the Biden Administration “support an international phase-out of all general-purpose fluorescent lamps by 2025” and “phase out the manufacture and sale of fluorescent lamps in the United States by 2025.”<sup>38</sup> In addition, the Africa Region submitted a proposal to the Minamata Convention on Mercury<sup>39</sup> to insert phase-out dates for compact, linear, and cold cathode fluorescent lamps by 2025. Similarly, Environment and Climate Change Canada (“ECCC”) has proposed to amend the “Products Containing Mercury Regulations”<sup>40</sup> to phase out the manufacture and import of nearly all mercury-added lamps including screw-based compact fluorescents, automobile headlamps, linear and non-linear, and cold-cathode lamps by 2028.

A full transition to LEDs offers environmental benefits including energy savings and reduced risk from mercury pollution, but there are several points to consider. The first is that LEDs contain critical materials used in a wide array of technologies essential to domestic and national security including arsenic, gallium, indium, and the rare-earth elements (“REEs”) cerium, europium, gadolinium, lanthanum, terbium, and yttrium.<sup>41</sup> Currently, there is little data available on how many LEDs are recovered for recycling in Maine. LEDs that contain sufficient

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<sup>36</sup> <https://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/Amended%20FINAL12.28.2021-7152%28a%29%286%29PositionMemo.pdf>

<sup>37</sup> UNEP. (2021, December 7). *Webinar - phasing out mercury-added lamps*. <https://www.unep.org/globalmercurypartnership/events/unep-event/webinar-phasing-out-mercury-added-lamps-7-december-2021>.

<sup>38</sup> Clean Lighting Coalition (). *Mercury in Fluorescent Lighting: Unnecessary Health Risks & Actionable Solutions*. [https://cleanlightingcoalition.org/wp-content/uploads/sites/96/Mercury-in-Fluorescent-Lighting\\_FINAL-1.pdf](https://cleanlightingcoalition.org/wp-content/uploads/sites/96/Mercury-in-Fluorescent-Lighting_FINAL-1.pdf).

<sup>39</sup> See *Proposal by the Africa region to amend Annex A: Part I, and Annex A: Part II to the Minamata Convention on Mercury to be considered by the Conference of the Parties at its fourth meeting*. [https://www.mercuryconvention.org/sites/default/files/documents/submission\\_from\\_government/ES\\_Africa\\_Amen\\_dment\\_Proposal\\_April\\_2021.pdf](https://www.mercuryconvention.org/sites/default/files/documents/submission_from_government/ES_Africa_Amen_dment_Proposal_April_2021.pdf).

<sup>40</sup> Government of Canada. (2019, July 22). National strategy for lamps containing mercury. <https://www.canada.ca/en/environment-climate-change/services/pollutants/mercury-environment/federal-actions-regulations-consultations/strategy-lamps-mercury/strategy.html>.

<sup>41</sup> Wilburn, D.R., 2012, Byproduct metals and rare-earth elements used in the production of LEDs—Overview of principal sources of supply and material requirements for selected markets: U.S. Geological Survey Scientific Investigations Report 2012–5215, 15 p., available only at <http://pubs.usgs.gov/sir/2012/5215/>.

quantities of certain materials such as metals may be classified as universal waste. The Department's Chapter 858: *Universal Waste Rules*, aligns with Environmental Protection Agency ("EPA") requirements for management of universal waste<sup>42</sup>. While LEDs are much safer than mercury-added lamps from a toxics perspective, they should also be managed as universal waste lamps unless a generator<sup>43</sup> has knowledge or data from the manufacturer that demonstrates that the LEDs in question are non-hazardous. Product stewardship programs are a common strategy to meet universal waste management requirements and to capture residential wastes. Although no state has incorporated LEDs into a lighting product stewardship program, several jurisdictions including British Columbia<sup>44</sup> and Prince Edward Island<sup>45</sup> in Canada have chosen to do so, while the European Union regulates end-of-life management of LEDs through its waste electrical and electronic equipment ("WEEE") directive, which requires the separate collection and proper treatment of WEEE and sets targets for collection as well as for recovery and recycling.<sup>46</sup> The Department is working with other states and the EPA to evaluate potential models for a LED collection and recycling program.

### **I. Architectural paint (2015) - 38 M.R.S. § 2144**

Maine's architectural paint stewardship law, enacted in 2015, requires manufacturers to set up and operate a statewide collection system for post-consumer paint. PaintCare is a non-profit third-party organization established by the paint manufacturers to fulfill their responsibilities under Maine's stewardship law and similar laws in nine other states and the District of Columbia. The program is funded by a consumer fee on each container of paint sold.<sup>47</sup> Consumers may return unwanted architectural paint at no cost to participating retail and municipal collection sites as well as HHW collection events where PaintCare is participating. PaintCare provides each collection location with storage containers for the returned paint, in-person training and a training manual, education and outreach materials, and provides for transportation and recycling or disposal of the collected paint. To prevent collection sites from being overwhelmed with large quantities of paint, PaintCare also offers a free large volume pickup service for those with 200 gallons or more of paint<sup>48</sup>.

Several minor programmatic changes have taken place in the PaintCare program.

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<sup>42</sup> 40 CFR 273.9, <https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-273>

<sup>43</sup> 09-096 CMR 851, *Standard for Generators of Hazardous Waste*.

<https://www.maine.gov/sos/cec/rules/06/096/096c851.docx>.

<sup>44</sup> ProductCare (n.d.). *Light Recycling, British Columbia*. <https://www.productcare.org/products/lights/british-columbia/>

<sup>45</sup> See: [E09-10-Environmental Protection Act Materials Stewardship and Recycling Regulations.pdf](#)

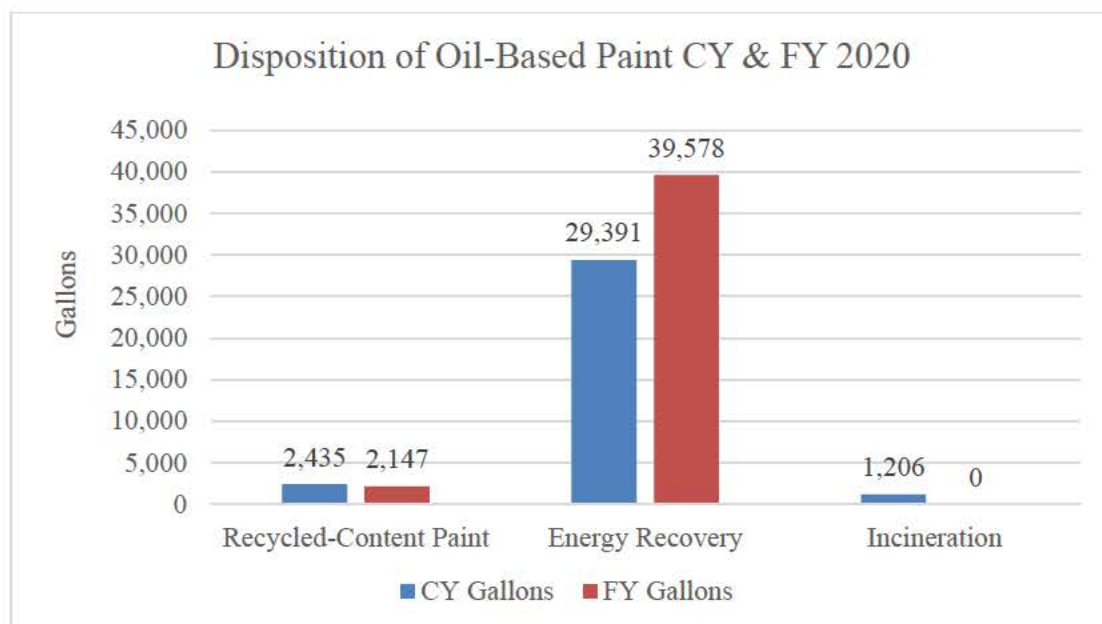
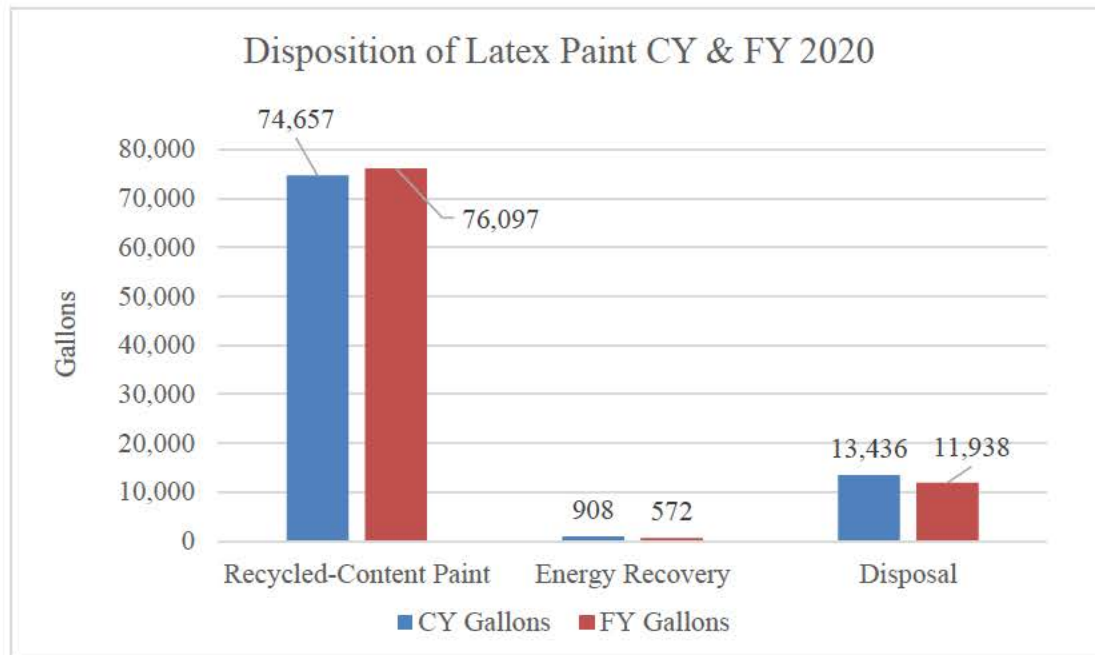
<sup>46</sup> See: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02012L0019-20180704>

<sup>47</sup> There is no fee on containers that are a half pint or smaller.

<sup>48</sup> [Chapter 858](#) -- Universal Waste Rules prohibits accumulation of more than 55 gallons of oil-based paint at one time.



The first change is a transition from a fiscal year (“FY”) reporting schedule to a calendar year (“CY”) reporting schedule. PaintCare has implemented this change for administrative purposes in order to bring all of its state programs on the same reporting schedule. This change will not impact program operations and aligns with requirements in Maine’s paint stewardship law and program plan. Information on PaintCare’s program activity during FY 2020 report was provided in the [2021 Product Stewardship Report](#). While the CY information is very similar to the FY information already outlined in the previous stewardship report, the graphs below provide a summary of the slight differences for overall paint disposition during these time periods.



The second change is a minor adjustment in the fee structure to move two-gallon paint containers from the “Larger than one gallon up to five gallons” fee category (\$1.60 per container) to the “one gallon” fee category (\$0.75 per container). This change took effect January 1, 2022 and will ensure the fee structure for the smaller two-gallon container is more in line with actual management costs. PaintCare Maine, LLC ended CY 2020 with a reserve level of approximately 43%, slightly higher than the 39% reserve level reported at the end of FY 2020. There are no concerns at this time that there will be a need to increase the fee on new paint sales to support the program.

PaintCare's analysis for CY 2020 shows that its collection network provides a permanent collection site within 15 miles of 95.7% of Maine residents, up slightly from the 94.9% access rate reported for FY 2020 and exceeding the 90% goal set in statute. PaintCare conducts outreach to ensure Mainers are aware of their options for managing excess and unwanted architectural paint through this collection network.

The PaintCare program had to make changes to adapt its outreach strategies during the COVID-19 pandemic. In addition to conducting radio, print, and social media outreach activities along with launching a newly redesigned website, PaintCare conducted direct assistance to Maine collection sites in 2021. PaintCare's Program Manager, who also manages the Vermont program, typically visits each collection location throughout both states at least once annually. While some site visits are being conducted in-person, they are less frequent and limited in reach due to the continuing COVID-19 pandemic. The PaintCare Program Manager has been able to conduct remote check-ins with Maine collection sites via phone and conduct online trainings for new collection sites.

### **III. New stewardship programs enacted in 2021**

The 130<sup>th</sup> Maine Legislature 1<sup>st</sup> Regular Session enacted legislation creating two additional product stewardship programs.

#### **A. Pharmaceuticals – 38 M.R.S. § 1612**

P.L. 2021, ch. 94 - *An Act To Support Collection and Proper Disposal of Unwanted Drugs* was enacted during the First Regular Session of the 130<sup>th</sup> Legislature. This law ([38 M.R.S. § 1612](#)) requires drug manufacturers to pay for and manage a drug-take back program for collection and disposal of household pharmaceuticals. Drug manufacturers, individually or jointly with other manufacturers, must operate a stewardship program that has been approved by the Department, or enter into an agreement with a stewardship organization that will operate a Department approved program for collection of unwanted covered drugs. Covered drugs for the program are any substance recognized as a drug under 21 U.S.C., Section 3210 (g)(1), including prescription and non-prescription drugs, drugs in medical devices, generic drugs, and drugs for veterinary

use. Covered drugs do not include vitamin supplements, cosmetics, cleaning products, soap and shampoo, pet pesticide products in collars and shampoos, emptied syringes and other empty medical devices, home kidney dialysis, and drugs used solely in a clinical setting.

Stewardship programs operated by the drug manufacturers must make available free, convenient, and ongoing collection opportunities to all persons in the state. The program plan submitted to the Department for approval must certify that the stewardship organization will accept all drugs regardless of manufacturer. Program plans must include the list of manufacturers participating with that specific organization, describe outreach and education programs, and outline the collection process, describing how collected drugs will be tracked, measured, and ultimately disposed.

All pharmacies licensed in the state are considered “mandatory pharmacy collectors” by the law and must provide for the collection of covered drugs by providing mail back envelopes, hosting a collection receptacle, or providing for another collection method approved through the stewardship plan. Out of state pharmacies that provide covered drugs by mail must offer a mail back option for unwanted drugs and provide information to customers about that service. The law does not prevent law enforcement agencies from collection activities or being a collection agent and requires that any authorized collector of covered drugs be added to a stewardship program if it wishes to participate.

The Department was provided funding for one staff person to oversee and administer this program. The new staff will initiate program development in early 2022. Manufacturers (or their stewardship organization) must submit stewardship plans to the Department by July 1, 2022. The Department has 120 days to approve or reject plans after they have been submitted. Plans must be implemented 180 days after approval by the Department.

### **B. Packaging – 38 M.R.S. §2146**

P.L. 2021, ch. 455 - *An Act To Support and Improve Municipal Recycling Programs and Save Taxpayer Money* was enacted during the First Regular Session of the 130<sup>th</sup> Legislature. This Law ([38 M.R.S. §2146](#)) establishes a stewardship program for packaging. Producers of packaging will pay into a fund based on the amount and the recyclability of packaging associated with their products. These funds will be used to reimburse municipalities for eligible recycling and waste management costs, make investments in recycling infrastructure, and help Maine citizens understand how to recycle. This program's purpose is to reduce the volume and toxicity of packaging while increasing its recyclability.

The program will be operated by a stewardship organization ("SO") that will be selected by the Department following a competitive bidding process. The SO will be responsible for day to day operation of the program with the Department providing oversight. Costs for the SO and Department oversight will be funded by producer payments.

Funding for the Department positions that will be responsible for program development was allocated by the legislature beginning in July of 2022. During 2023 and 2024 the Department will engage in a robust stakeholder outreach program to develop program rules. The schedule for program development will provide several years to coordinate Maine's program with programs anticipated in other states and for product manufacturers to begin to adjust packaging. The expected implementation timeline is in the Table below.

### Packaging Program Implementation Timeline

July 2022	Funding for program administration becomes available. Program staff will be hired for program development and oversight
July 2022 – December 2023	Department will reach out to stakeholders for rule development
December 31, 2023	Deadline to initiate rulemaking with the Board of Environmental Protection (“Board”)
Summer 2024	Anticipated adoption of routine/technical rules and provisional adoption of major substantive rules by the Board
January 2025	Submittal of major/substantive rules to the legislature for approval
February 15, 2025	First program update report due to legislature
Spring/Summer 2025	Anticipated final adoption of major substantive rules by the Board
Fall 2025	Issue Request for Proposals for the operation of the SO
2026	Selection of SO operator
2026	First producer payments due to the Department. Payments are due no more than 180 days after the effective date of SO contract
2027	First payments are issued to municipalities
February 15, 2028	Program report to legislature requiring comprehensive review of the rules and outlining any proposed changes to rules and law

The program will not go into effect until the rules outlining the details of the program as described in the authorizing legislation are in place and a contract is established with the SO. Starting in July of 2022 the Department will issue a quarterly newsletter to all interested parties and stakeholders outlining progress to date in development of the program and dates of upcoming activities. The Department has developed a webpage ([Extended Producer Responsibility for Packaging, Waste Management, Maine Department of Environmental Protection](#)) for the program which will be periodically updated.

## IV. Candidate products for stewardship programs

The following products have been identified as potential program candidates for future consideration using the criteria outlined in Maine’s Product Stewardship Law (“Framework Law”) [38 M.R.S. § 1772](#). This law charges the Department with the identification of products for which new product stewardship programs might be suitable and lays out five criteria for which the Department should base that decision:

- The product category contains toxics that pose a risk to people or the environment.
- A program would increase materials recovery.
- A program would reduce costs to local governments and taxpayers.
- There are demonstrated successful programs for the product in other jurisdictions.
- Any existing voluntary management programs are insufficient.

The Department may identify a product or product category as a candidate for a product stewardship program if it determines that one or more of the five criteria are met.

Although the Department is not currently proposing product stewardship programs for these items, they continue to be products of concern and may be comprehensively assessed by criteria outlined in the Framework Law as potential stewardship candidates in the future.

### A. Carpet

Carpet consistently meets four of the five criteria listed in the Framework Law for identifying stewardship candidate products, and certain carpets contain toxics and therefore meet all five. Research shows that some carpets may contain brominated flame retardants<sup>49</sup> and per- and polyfluoroalkyl substances (“PFAS”).<sup>50</sup> In 2021, the Legislature addressed PFAS in carpeting by authorizing P.L. 2021, ch 477, *An Act to Stop Perfluoroalkyl and Polyfluoroalkyl Substances Pollution*, which prohibits the sale or distribution for sale of any carpet or rug that contains intentionally added PFAS beginning January 1, 2023.

### B. Mattresses

[LD 710](#) - *Resolve, To Require the Department of Environmental Protection to Study the Establishment of a Product Stewardship Program for Mattresses* directed the Department to study the establishment of a new stewardship program for mattresses and report the findings of its study to the ENR Committee. The report was submitted in December of 2019. The Department concluded that recycling does not appear to be economically or environmentally

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<sup>49</sup> *Environmental concentrations and consumer exposure data for selected flame retardants (TBB, TBPH, TBBPA, ATO)*, Consumer Product Safety Commission, 2015.

<sup>50</sup> Columbus, C. (2018, December 13). *PFAS detected in carpets from several U.S. manufacturers*. Retrieved from <https://www.eenews.net/stories/1060109571>.

beneficial at this time, and the most appropriate course of action would be to proceed with pilot projects to address outstanding questions concerning waste mattress management, rather than implement a stewardship program.

In 2021, the Department surveyed the three waste-to-energy facilities in Maine, seven landfill facilities, and thirteen transfer stations to determine the current state of mattress disposal<sup>51</sup>. All the transfer stations surveyed indicated they have disposal options for mattresses; all include them with either their bulky waste or construction and demolition debris (CDD). Two of the waste-to-energy facilities accept mattresses as feedstock. The third facility has a physical restriction regarding bulky materials due to their boiler entry dimensions. This facility ships mattresses with other bulky waste it cannot accept to a landfill. Of the seven landfills surveyed, five accept mattresses for disposal. Of the two landfills that do not dispose of mattresses, one ships them to another landfill for disposal, and the other currently ships them to an industrial shredding facility due to a favorable market price. It should be noted that mattress construction is slowly changing from multi-material construction with wood and steel components to a foam only construction, which may increase the recyclability of the mattress and also lessen some of the issues regarding their disposal in landfills.

As several states, such as Massachusetts, Rhode Island, and California, have mattress dismantling and recycling programs, the costs for dismantling mattresses can be extrapolated from those programs. However, the cost of developing collection stations, shipping to dismantling facilities, and then shipping components to recycling facilities is unknown. Given Maine's geography and the fact that there are no recycling facilities for mattress components located in Maine at this time, a full evaluation of cost should consider greenhouse gas emissions in addition to dollar figures.

### C. Gypsum wallboard

Gypsum wallboard, also known as drywall, plasterboard, or sheetrock, is composed primarily of  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$  (calcium sulphate dihydrate). Although gypsum is not hazardous, landfill disposal of the material can result in the generation of hydrogen sulfide gas which in turn causes odor issues and potential health impacts.<sup>52</sup> Due to the risks associated with landfilling of gypsum, it has been banned from landfill disposal in several jurisdictions including Massachusetts, which bans landfill disposal of clean gypsum wallboard<sup>53</sup> and British Columbia and Europe which have

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<sup>51</sup> Memorandum Report – Update to the Mattress Stewardship Report, December 2019. Brian Beneski & James Guerra, Maine Department of Environmental Protection. December 1, 2021.

<sup>52</sup> Northeast Waste Management Officials' Association. (2010). *Policy Options White Paper: Promoting Greater Recycling of Gypsum Wallboard from Construction and Demolition Projects in the Northeast*. Retrieved from <http://www.newmoa.org/solidwaste/GypsumWallboardRecyclingWhitePaperFinal9-17-10.pdf>

<sup>53</sup> See Massachusetts Guidance on Gypsum Wallboard: <https://www.mass.gov/doc/gypsum-wallboard-waste-ban-guidance-cd-handling-facilities/download>

both reuse requirements and disposal restrictions.<sup>54</sup> More recently, Seattle began requiring that all construction and demolition projects separate gypsum for reuse.<sup>55</sup> Gypsum is a good candidate for product stewardship because there is a strong environmental incentive to reduce landfill disposal, but at the same time, there is currently a lack of economic incentive and processing infrastructure in Maine.

#### **D. Household hazardous waste**

HHW is a term used to describe common household products that exhibit the characteristics of hazardous waste as defined in the Resources Conservation and Recovery Act but are exempt from the precautionary handling requirements that apply to commercially generated hazardous waste.<sup>56</sup> The Department has experienced an increase in inquiries for HHW disposal during 2021.

Options to manage HHW are extremely limited in many regions of Maine, as there are only two operations open to all Maine residents. A third location that had previously accepted HHW from residents stopped doing so in 2020. Neither of the remaining collection sites operates during the winter and their locations are not convenient for many Maine residents. Additionally, disposal at these facilities is expensive. The Department does not anticipate an expansion in management opportunities unless a funding source can be identified. In the meantime, hazardous wastes such as cleaning solutions and other solvents, oils, waste gas, and pesticides from households are most likely being handled as if they were not hazardous and are disposed of in the trash like any municipal solid waste. HHW products may catch fire, react, or explode or may be corrosive or toxic if not managed properly. These risks to human health and the environment underscore the importance of managing HHW cautiously. HHW meets four of the five criteria for product stewardship outlined in the Framework Law.

#### **E. Solar panels**

Solar panels have been identified as a potential EPR product in previous annual reports, and was the subject of [LD 1595](#) - *An Act To Address Waste Associated with Solar Energy Equipment*, which was considered during the First Regular Session of the 130<sup>th</sup> Maine legislature but ultimately was not passed. The bill would have required that a property with solar panels be insured to pay the full cost of dismantling and recycling. It would have established a tracking system for solar panels and provided state grant funding for the improvement of the recycling process. This was to be funded through a \$125 fee assessed on each solar panel in Maine in addition to potentially utilizing other state funding resources.

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<sup>54</sup> Waste Today. (2019, May 8) *NYC closes the loop on gypsum wallboard*. Retrieved from <https://www.wastetodaymagazine.com/article/building-product-ecosystems-closed-loop-gypsum-wallboard-nyc>

<sup>55</sup> Ibid.

<sup>56</sup> Retrieved from <https://www.epa.gov/hw/household-hazardous-waste-hhw>.

Product stewardship for photovoltaic (“PV”) modules, commonly referred to as solar panels, meets all five criteria outlined in the Framework Law. Solar panels are made up of PV cells and semiconductors electrically connected in a module or panel.<sup>57</sup> Solar panels have an average lifetime of 25-30 years.<sup>58</sup> The overall proportion of waste to new installations is expected to increase over time from an estimated 4-14% in 2030 and up to more than 80% in 2050.<sup>59</sup> For general context, the Department’s Bureau of Land Resources’ Natural Resources Protection Act (“NRPA”) program approved applications for over 5,000 acres of solar panel development in 2020, and for 3,700 acres in 2021. P.L. 2021, ch. 151, *An Act To Ensure Decommissioning of Solar Energy Developments*, now requires persons constructing solar development projects larger than three acres to plan for and demonstrate financial ability to complete physical removal of all components of the development when it is no longer in productive use.

The state of Washington<sup>60</sup> and Niagara county in New York<sup>61</sup> are currently the only state or municipal governments to have implemented product stewardship programs for solar panels. Any product stewardship program pursued in Maine should include incentives for design to minimize impacts on the environment and increase efficient use of resources for production, collection, and recycling. The Department will work with other states to evaluate potential models for collection and recycling of waste solar panels.

## V. Conclusion

Maine’s product stewardship programs continue to divert a significant amount of material for recycling and ensure the safe handling of products containing toxics. The Department is currently focused on implementing recent legislative changes and new programs, while it continues to oversee existing core product stewardship programs. Although the Department is not proposing new product stewardship programs at this time, the Department will continue to assess candidate products presenting end-of-life management challenges that may be addressed by carefully constructed programs in the future. However, as described in the Department’s [2021 Product Stewardship Report](#), implementation of any new product stewardship programs will require no less than one-half full time equivalent (“FTE”) staff position. While the Department supports continuing to utilize product stewardship strategies to reduce waste, increase recycling, and further support the state’s solid waste management hierarchy, evaluation

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<sup>57</sup> U.S. Energy information Administration. (n.d.). *Solar explained: Photovoltaics and electricity*. Retrieved from <https://www.eia.gov/energyexplained/solar/photovoltaics-and-electricity.php>.

<sup>58</sup> Solar Energy Industry Association, *PV Recycling*. Retrieved from <https://www.seia.org/initiatives/pv-recycling>.

<sup>59</sup> *Ibid.*

<sup>60</sup> State of Washington Department of Ecology – Our recycling Programs-solar panels <https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Our-recycling-programs/Solar-panels>

<sup>61</sup> *Niagara County, NY hopes new recycling law will discourage solar developers*, WasteAdvantage Magazine, June 21, 2021 <https://wasteadvantagemag.com/niagara-county-ny-hopes-new-recycling-law-will-discourage-solar-developers/>



and regulation development of new product categories will require additional resources for program administration.

***Appendix A - Comments Received on Posted Report***

**From:** [Dillon, Frederick](#)  
**To:** [Beneski, Brian](#)  
**Cc:** [Wood, Gregg](#); [Moody, Alison R](#); [Kristie Rabasca](#); [DYakovleff@cumberlandswcd.org](mailto:DYakovleff@cumberlandswcd.org); [Ali Clift](#)  
**Subject:** HHW programs  
**Date:** Tuesday, January 18, 2022 12:49:41 PM  
**Attachments:** [SoPo HHW Program Cost 2011-2021.pdf](#)

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**EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.**

Hi Brian,

I read your Annual Product Stewardship report for 2021 over the weekend and found it to be very informative (and encouraging for the proposed new initiatives!). I also wanted to let you know that while it's pretty limited from a statewide perspective, the annual HHW events provided by Maine's 30 MS4 programs might be worth mentioning in future annual reports. MS4 communities tend to be population centers and therefore are available to considerable numbers of people. For example, over the past decade the City of South Portland has accepted HHW waste items from over 3,500 people and invested over \$200K in our HHW program. I'm pretty sure all other MS4s have to offer at least 1 HHW event per year.

Thanks again and keep up the great work!

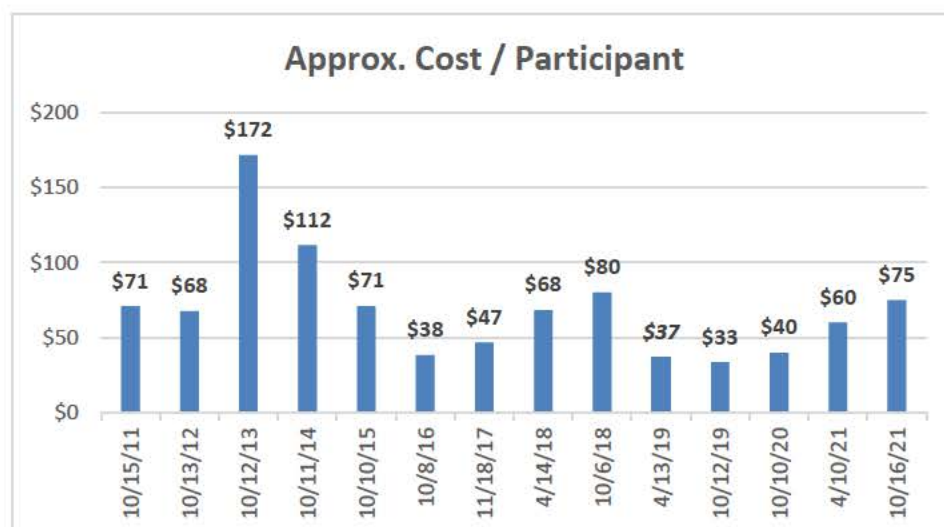
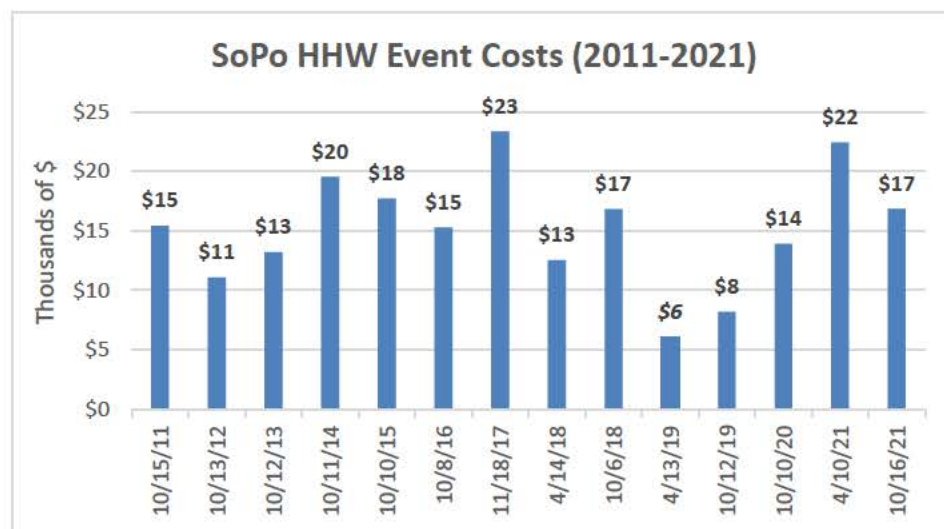
Fred

Fred Dillon – Stormwater Program Coordinator  
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**NOTICE:** Under Maine's Freedom of Access ("Right-to-Know") law, documents - including e-mail - in the possession of public officials about City business are classified as public records. This means if anyone asks to see it, we are required to provide it. There are very few exceptions. We welcome citizen comments and want to hear from our residents, but please keep in mind that what you write in an e-mail is not private and could show up in the local newspaper.

## City of South Portland Household Hazardous Waste Program Costs (2011-2021)

Event Date	Total Cost	Approx. # of Participants	Approx. Cost Per Participant
10/15/11	\$15,418.66	218	\$70.73
10/13/12	\$11,095.18	164	\$67.65
10/12/13	\$13,214.85	77	\$171.62
10/11/14	\$19,531.02	175	\$111.61
10/10/15	\$17,733.53	250	\$70.93
10/8/16	\$15,264.65	400	\$38.16
11/18/17	\$23,338.28	500	\$46.68
4/14/18	\$12,532.93	184	\$68.11
10/6/18	\$16,805.42	210	\$80.03
4/13/19	\$6,061.40	165	\$36.74
10/12/19	\$8,193.20	246	\$33.31
10/10/20	\$13,917.81	350	\$39.77
4/10/21	\$22,433.18	375	\$59.82
10/16/21	\$16,848.00	225	\$74.88
<b>Overall</b>	<b>\$212,388.11</b>	<b>3539</b>	<b>\$60.01</b>





February 12, 2022

Mr. Brian Beneski  
Director, Bureau of Land Resources  
Maine DEP  
17 State House Station  
Augusta, ME 04333-0017

Mr. Beneski,

On behalf of the members of the Product Management Alliance (PMA), we appreciate the opportunity to express the Product Management Alliances' position on the Department of Environmental Protection's Annual Report to the Joint Standing Committee on Environment and Natural Resources, Concerning the Implement of Product Stewardship in Maine.

My name is Kevin Canan, and I serve as the Executive Director of the PMA. By way of introduction, the PMA is a coalition comprised of trade associations and corporations that represent a broad array of consumer products. Our mission is to support market-based extended producer responsibility (EPR) efforts, as well as voluntary incentives for increased recovery and sustainable products and package design. We were founded precisely as a response to the signing of LD 1631 into law in 2010, the law which compels this report.

PMA's members have long strived to voluntarily recover the products that they manufacture. The PMA understands and appreciates Maine's desire to seek ways to improve the recovery rates of goods. However, we believe that expanding current EPR programs and adding additional EPR programs for additional products, specifically the carpet and mattress industries enumerated in the report, would simply add costly and unnecessary mandates for both the state government to implement and run this program; as well as for retailers and manufacturers in Maine. These costs will ultimately be borne by taxpayers and consumers.

Additional EPR programs would set up a confusing and bureaucratic system of recovery for the residents of the state with similar types of products having very different end-of-life recovery schemes. In addition, these types of restrictive programs would likely to have a chilling effect on manufacturers and retailers doing business in Maine, and as a result business very well could be lost to neighboring states.

PMA members and businesses utilize sophisticated programs in place that continue to increase the amounts of products recovered and recycled through voluntary initiatives. Today recovery rates are at record levels, and they are continually striving to increase these numbers. The existence of these efforts illustrate that new mandates on producers are not necessary to reduce waste and increase recycling and the use of recycled content. Thus, we urge the DEP and the legislature to **strongly examine voluntary, market-based recovery efforts** for increased recovery of products and oppose any new or further expansion of EPR in the state that are enumerated in the report.

The members of the PMA, and the industries they represent, recognize the desire of the public and policymakers for environmentally responsible business practices. That is why our member companies are voluntarily involved in waste recovery programs, and support recycling where it is economically and logistically feasible.

We hope to have a positive and constructive working relationship with you.

Sincerely,

A handwritten signature in blue ink, appearing to read 'KCC', with a long horizontal flourish extending to the right.

Kevin C. Canan  
Executive Director

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February 1, 2022

Mr. Brian Beneski  
Division of Materials Management  
Maine DEP 17 State House Station  
Augusta, ME 04333-0017

Via E-Mail - [brian.beneski@maine.gov](mailto:brian.beneski@maine.gov)

Re: Annual Product Stewardship Report 2022 - Carpet

Dear Mr. Beneski,

I read with interest your January 2022, "Annual Product Stewardship Report." As president of the Carpet & Rug Institute (CRI), a not-for-profit trade association that represents carpet manufacturers who are responsible for more than 95% of the carpet produced in the United States, I am concerned about the possible ramifications of over-regulating post-consumer carpet products. Carpet is one of the last remaining major U.S. textile industries, and tens of thousands of American jobs depend on the U.S. carpet industry, in manufacturing, transportation, installation, retail sales, recycling, and more. Your report references the amount of carpet going into Maine's landfills, and while carpet is neither toxic nor hazardous, we understand that landfill space is significantly limited.

The carpet industry has been a leader in forging product sustainability. One of our significant accomplishments is The Carpet America Recovery Effort (CARE). CARE is a voluntary, non-profit organization dedicated to increasing the landfill diversion, reuse, and recycling of waste carpet through market-based solutions that benefit the economy as well as the environment. Reduction in the amount of carpet going to landfills each year is already happening. Since 2002 U.S. carpet manufacturers, working with independent recyclers and processors, have diverted more than 5 billion pounds of used carpet from landfills. CARE's four hundred-plus members include independent carpet recyclers, carpet manufacturers, dealers, retailers, suppliers, and non-governmental organizations.

Unlike newspapers and aluminum cans which are relatively easy to recycle, carpet is a complex product that is difficult to separate into its component parts. However, there are multiple products currently in use that contain materials recovered from used carpet.

- o New carpet and carpet padding
- o Plastic components for automobiles and consumer products
- o Building materials – architectural moldings, boat docks, and decks
- o Sound barriers – along interstates and elsewhere
- o Erosion control, silt and oil filtration materials
- o In addition, post-consumer carpet, which burns hotter and produces less greenhouse gasses than coal, can be used as an alternative fuel when other uses are not practical.



CRI and its members have not only worked hard to ensure that their products are completely safe to the consumer, but they have taken great effort towards producing sustainable products. We are therefore particularly concerned that the carpet industry, which has been a leader in addressing environmental concerns in a proactive manner, would have carpet highlighted as one of the first non-hazardous products to be considered for extended producer responsibility.

Carpet is one of the safest and healthiest products in the home, office, or school. It adds comfort, warmth, and beauty to any home. In fact, carpet's use in virtually every residential and commercial interior setting is so accepted that we are not aware of any federal or state requirements covering its sale or use. As such, carpet, because of its long track record of performance and sustainability initiatives, should not be subjected to the kind of extreme product stewardship or take-back programs referenced in your report.

These approaches rely on the flawed premise that assigning product manufacturers the end-of-life costs of recycling or disposing of products will result in more environmentally preferred product designs, eliminate product disposal costs, and reduce disposal of products in landfills. However, current product-mandated manufacturer take-back programs have not successfully demonstrated positive cost-benefit results in collecting products at the end of their life cycles. It is unrealistic to expect that consumers will utilize individual and separate product take-back programs for diverse product categories or that those programs would use resource efficiently.

Manufacturers are continually producing more environmentally preferable products and using the most recyclable and environmentally friendly components and packaging available and feasible. These activities serve the best interests of the environment and are also necessary to be cost-effective with limited resources and responsive to consumer demands.

Mandates for product take-back and recycling can harm the environment in unforeseen ways, by forcing companies to switch from materials that are perhaps more energy-efficient to produce, lighter to transport, or safer, to heavier materials that are more recyclable, but require more energy to produce and use and could pose greater safety concerns. Market processes encourage innovation in the use of limited resources throughout a product's life cycle, while mandated product take-back programs override this natural research and development process, and only drive manufacturers toward materials that have more positive recycling or take-back attributes.

The ongoing COVID 19 pandemic has increased economic challenges for industry and retailers. In these times of extreme fiscal pressures on both industry and government, it seems prudent to include a requirement for cost-effectiveness or a cost/benefit analysis in any proposed new mandate. However, there appears to be no such requirement included in this program. Consequently, the mandates of this program could effectively put an industry and/or retailers out of business and drain state resources in staggering administration costs, while still mandating DEQ to move forward. We urge the inclusion of a cost-benefit analysis component in any extended producer program, to prioritize limited resources and prevent fiscally questionable mandates.

As an alternative to mandates, CRI supports continued voluntary initiatives to find cost-effective solutions. We feel a much more prudent and effective approach to the landfill diversion of carpet lies in using the power of government in a different way; by driving the use of products that





contain recycled or recyclable materials through the state's product specification process. Why not use the expertise of DEP to identify products containing post-consumer recycled and recyclable materials and requiring state purchase of such products? This approach would drive the market to develop products that meet these requirements, and thereby reduce the amount of material going to landfills.

On behalf of the members of the Carpet and Rug Institute, I thank you for your consideration of these concerns. If you have any questions, please do not hesitate to contact Jennifer Stowe, CRI Vice President, Government Relations at [jstowe@carpet-rug.org](mailto:jstowe@carpet-rug.org) or 703-875-0634.

Regards,



Joe Yarborough  
President



[carpet-rug.org](http://carpet-rug.org)



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February 11, 2022

Brian Beneski  
Division of Materials Management  
Maine DEP  
17 State House Station  
Augusta, ME 04333-0017

**RE: Comments on the 2022 Product Stewardship Report**

Dear Mr. Beneski:

My name is Curtis Picard and I am the President and CEO of the Retail Association of Maine. I am a resident of Topsham. We have more than 350 members statewide and represent retailers of all sizes. Maine's retailers employ more than 80,000 Mainers. Thank you for the opportunity to share our comments on the 2022 Product Stewardship Report.

For the third year in a row, we want to focus our comments on Maine's e-waste program.

Maine's e-waste program has remained virtually unchanged since its inception. Our members that participate in the e-waste program in Maine and in other states around the country have told us that there are more efficient and effective models and programs in other states. They have told us that Maine's program is one of the costliest in the nation. In fact, they have told us that the cost of Maine's program is even higher than the costs in Hawaii where the material needs to be shipped to the Mainland for processing.

We believe that Maine's e-waste program is valuable and worth continuing, but the product stewardship programs in place in Maine should be operating with comparable costs to other states. The program should also have greater producer participation and control of certain aspects.

LD 1208 was submitted last year to help spur conversations around improvements to Maine's e-waste law. Maine DEP testified in opposition to the bill on the grounds that department would undertake review of the program and any necessary rulemaking. Although we have heard rumblings of some discussion, we have not been notified of any stakeholder process, rule making or other efforts to

address the issues that we and other parties have identified. The ENR Committee voted against LD 1208 because of the understanding that Maine DEP would focus on these issues. We urge Maine DEP to prioritize a review and update on Maine's e-waste program.

Thank you for the opportunity to share our concerns with you.

Sincerely,

Curtis Picard, CAE, President and CEO