February 24, 2026

To: Maryland Senate Education, Energy and Environment Committee

Re: SB0655 - Electronic Device Producer Responsibility Program

Favorable

As current President of the Maryland Recycling Network (MRN), I am writing in support of SB0655. I bring my experience managing electronics recycling contracts over the last 12 years at the Northeast Maryland Waste Disposal Authority. I am not speaking on behalf of the Authority.

Maryland Recycling Network members include public recycling and sustainability managers, private sector and non-profit recyclers and individuals who support recycling. We promote sustainable reduction, reuse and recycling (the 3 "R's") of materials otherwise destined for disposal and the purchase of products made with recycled material content. We achieve these goals through education programs, advocacy activities to affect public policy, technical assistance efforts, and the development of markets to purchase recycled materials and manufacture products with recycled content.

We have direct experience operating recycling and composting programs in the private sector and municipal government level. We know the ins and outs of recycling in Maryland. Our experience informs our comments.

We thank Senator Augustine for sponsoring this bill.

Maryland's electronics recycling law is outdated and does not fund recycling.

Electronics recycling plummeted in the market downturn of 2014, and has not recovered. Our state went from recycling over 19,000,000 million residential pounds per year, to under 6,000,000 pounds in recent years. That sharp decline kicked off in 2014, when municipal contracts began to see costs for the first time. Most programs stopped recycling televisions and computer monitors, the bulk of e-waste collected.

Now, Maryland has approximately 20 years left of landfill capacity, with only about 13 years when factoring in population growth, per MDE. There is an urgent need to ramp up recycling.

Maryland Recycling Network
c/o Mariner Management • PO Box 1640 • Columbia, MD 21044
Phone: (443) 741-8740 • www.MarylandRecyclingNetwork.org

Approximately only 8 of 23 Counties in Maryland recycle all electronics year-round, without drop off fees.

Six jurisdictions in Maryland have spent over $8,000,000 since 2014 to run these programs. Three of those six jurisdictions had limited programs in place, meaning total program costs would have far exceeded $8,000,000 if they had been recycling their televisions and computer monitors, which they were not.

The 2024 MDE Statewide Waste Study found over 41,00,000 pounds of electronics are landfilled in Maryland each year.

All of this is unsustainable.

This bill will take that financial burden off taxpayers and local government, and fully fund both collection sites and recycling operations, while manufacturers will continue to fund MDE's administration. It will insulate programs from unpredictable commodity markets, inflation and economic downturns.

It will grow local jobs and increase our domestic supply of rare earth elements, critical minerals and precious metals for the auto, jewelry, electronics and clean energy industries.

It will allow jurisdictions to divert much needed tax revenues to other critical public sector services, eliminate fees at public collection sites, and expand programs, especially for rural and underserved areas.

We've already seen fires at collection sites, MRFs and on solid waste trucks in Maryland. These battery fires burn longer, hotter and are more difficult to extinguish. They escalate much faster, are prone to reignition and can burn for days. We need to protect our essential workers, first responders, and recycling infrastructure. This bill will do that. The updated program will incorporate battery operated devices, as recommended by the Commission to Advance Lithium-Ion Battery Safety in Maryland.

The program will address the severe human health and safety issues from toxic chemical battery flammable gas, smoke, fire and explosion incidents (which can be fatal, even from inhalation). Battery fire incidents have been exponentially increasing in Maryland and across the country and world. Battery fire incidents severely impact and endanger site staff, capital infrastructure like MRFs, transfer stations, waste facilities and landfills, collection trucks/drivers, other processing equipment, insurance rates (limiting capability to even be insured), in addition to first responders, who continue to receive more and more call outs due to battery fires.

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Maryland now has modern EPR programs for packaging, paper and paint recycling. This bill complements those laws, to ensure the recycling of difficult material and public education is funded.

Maryland has proven itself to be a leader, by passing the 3rd e-waste law in the country, back in 2005. We are asking you to lead once again, and finish building on what is already in place.

Sincerely,

Kitty McIlroy

Kitty McIlroy
President
Maryland Recycling Network

The Maryland Recycling Network stands ready to serve as a sounding board and resource for legislators and others interested in pursuing our mission. Please do not hesitate to contact MRN via email phoustle@marylandrecyclingnetwork.org, phone 301-725-2508 or mail - MRN, PO Box 1640, Columbia MD 21044 if you have any questions or would like additional information regarding the above. We look forward to working with you to improve Maryland's recycling programs and thank you for your consideration and support.

Background

Maryland Specific Information

As Maryland continues to landfill its end-of-life electronics, we are losing rare earth elements, critical minerals and precious metals every day to our landfills which leads to having to outsource using virgin materials to produce counterparts. This causes Maryland and the U.S. to have a dependence on foreign suppliers, thus hurting our domestic stability.

Maryland has a critical need for these resources, in order to build the clean energy infrastructure essential to the state's future.

Due to costs of recycling, approximately only 8 out of 23 Counties/City of Baltimore in Maryland are able to provide to their residents free (at time of drop off), year-round acceptance of all types of municipal electronics for recycling, including flat screen and CRT Glass Tube televisions and computer monitors, historically the bulk of material by weight and volume in the municipal electronics stream. These jurisdictions include Baltimore City, Baltimore County, Calvert County, Charles County, Howard County, Montgomery County, Prince George's County and Somerset County. The existing Statewide Electronics Recycling Program (SERP) has been unable to provide the funding needed for local government to run these programs. This means millions of pounds of electronics are being landfilled every year. Detail on the existing SERP shortfalls can be found here.

MDE provided a space for government and industry (retailers and manufacturers) to discuss electronics recycling and the current law during the 2015 Electronics Recycling Department Workgroup. The stakeholders discussed in detail the current requirements and benefits, as well as shortcomings, one of those being the lack of funding directed to municipalities for actual recycling activities.

Beginning late 2021, Maryland Recycling Network chaired a Workgroup with Member/Non-Member Participation, which included stakeholders from government and electronic recyclers, to discuss the MDE Workgroup findings and provide a set of policy recommendations to improve the current law. More specifically, stakeholders recommended replicating what is working in other states and applying it to the SERP. These recommendations became SB0655/HB0992 Electronic Device Producer Responsibility Program.

Producer funded electronics programs are commonplace and well established in Europe and the United States already. Specifically, SB0655/HB0992 mirrors recent legislative updates in Oregon, Illinois, South Carolina & one underway in Minnesota. It also aligns with work being conducted under an EPA Battery and Battery Device focused EPR workgroup. Specifically, the EPA was first mandated to perform this work by the Infrastructure Investment and Jobs Act. In June and July 2022, the EPA conducted widespread outreach to learn about the current state of battery recycling and labeling efforts around the United States. The EPA hosted a series of virtual feedback sessions and issued a request for information to seek input on all battery chemistries (e.g., lithium-based and nickel-metal hydride) and all battery types (e.g., small format primary or single-use and rechargeable batteries; mid-format; large format vehicle batteries, including electric vehicles; and industrial batteries used in manufacturing, commercial businesses, and healthcare operations). The EPA then kicked off the working sessions on March 19, 2024, continuing throughout 2025 and 2026, to develop best practices for small, mid and large format battery recycling and refurbishing, while addressing challenges related to

collection and labeling, ultimately with an end goal of recommending a national EPR framework. This work has been deemed critical enough, and remained a priority under the new federal administration, beginning 2025, due to the importance of securing domestic critical minerals for U.S. energy independence as well as the importance of reducing the rapidly increasing rate of battery caused fires across the U.S.

Furthermore, no federal law exists to mandate electronics recycling, and only 25 states along with Washington D.C. have some form of an e-waste law. The United States has not joined 187 countries and the European Commission in ratifying the Basel Convention, an international agreement governing the transboundary movements of hazardous wastes and their disposal.

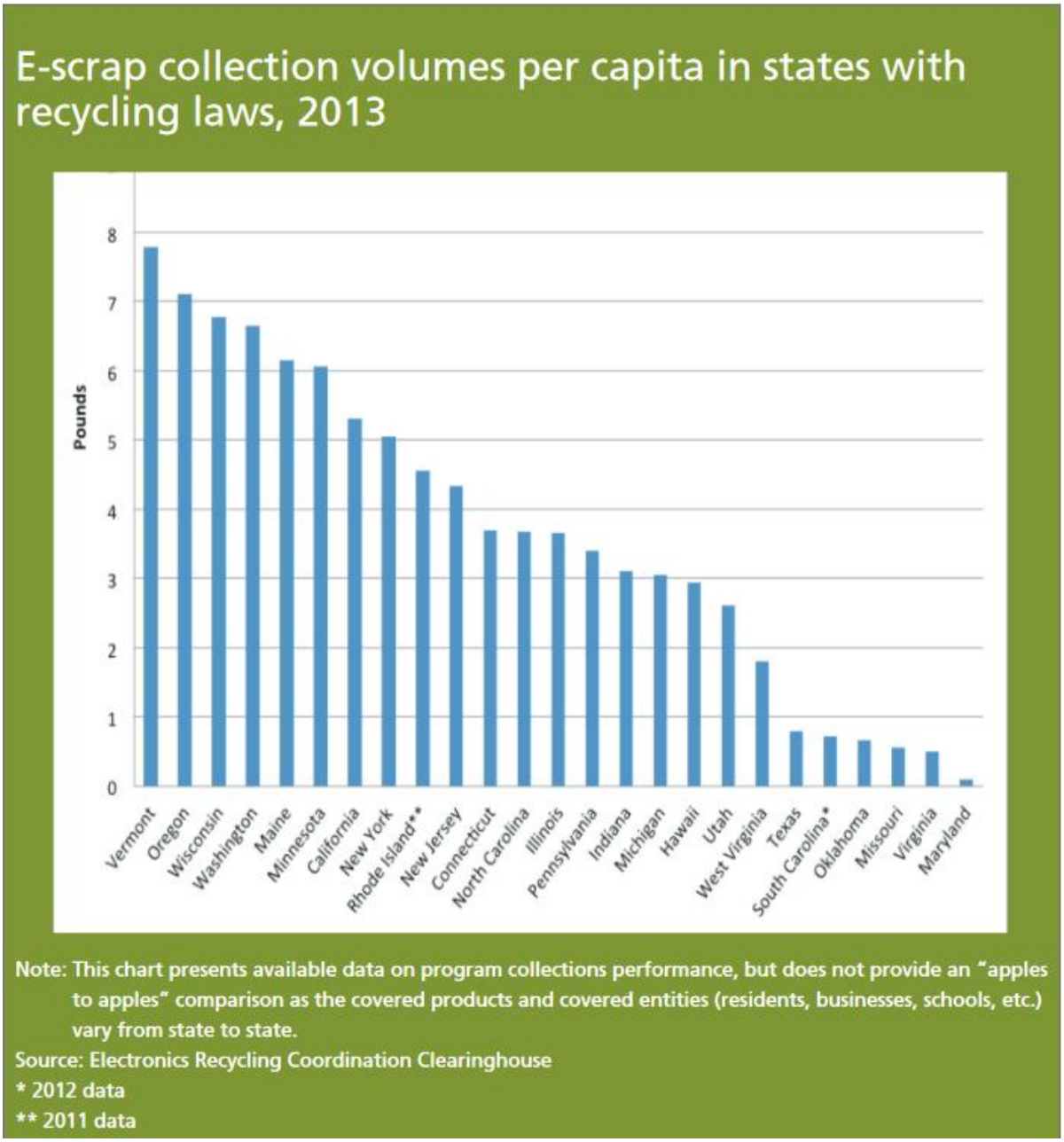
As a result of this bill, MDE will be able to maintain a list of authorized recyclers eligible for participation and funding under the state program, which will increase transparency of national and international shipments of e-waste. Authorized recyclers will have requirements for themselves and certified downstream markets, in order to guarantee certain environmental standards. This would support stronger environmental protection and prevent unauthorized exports, while creating jobs and supporting economic growth in the state, especially for those local electronics recyclers that operate here in Maryland.

Per the 2024 MDE Waste Characterization Study, approximately 41,394,00 pounds of electronics and computer products are disposed of in the state each year, as shown below (page 2-5)[1]

[1] Appendix A - Waste Characterization Study

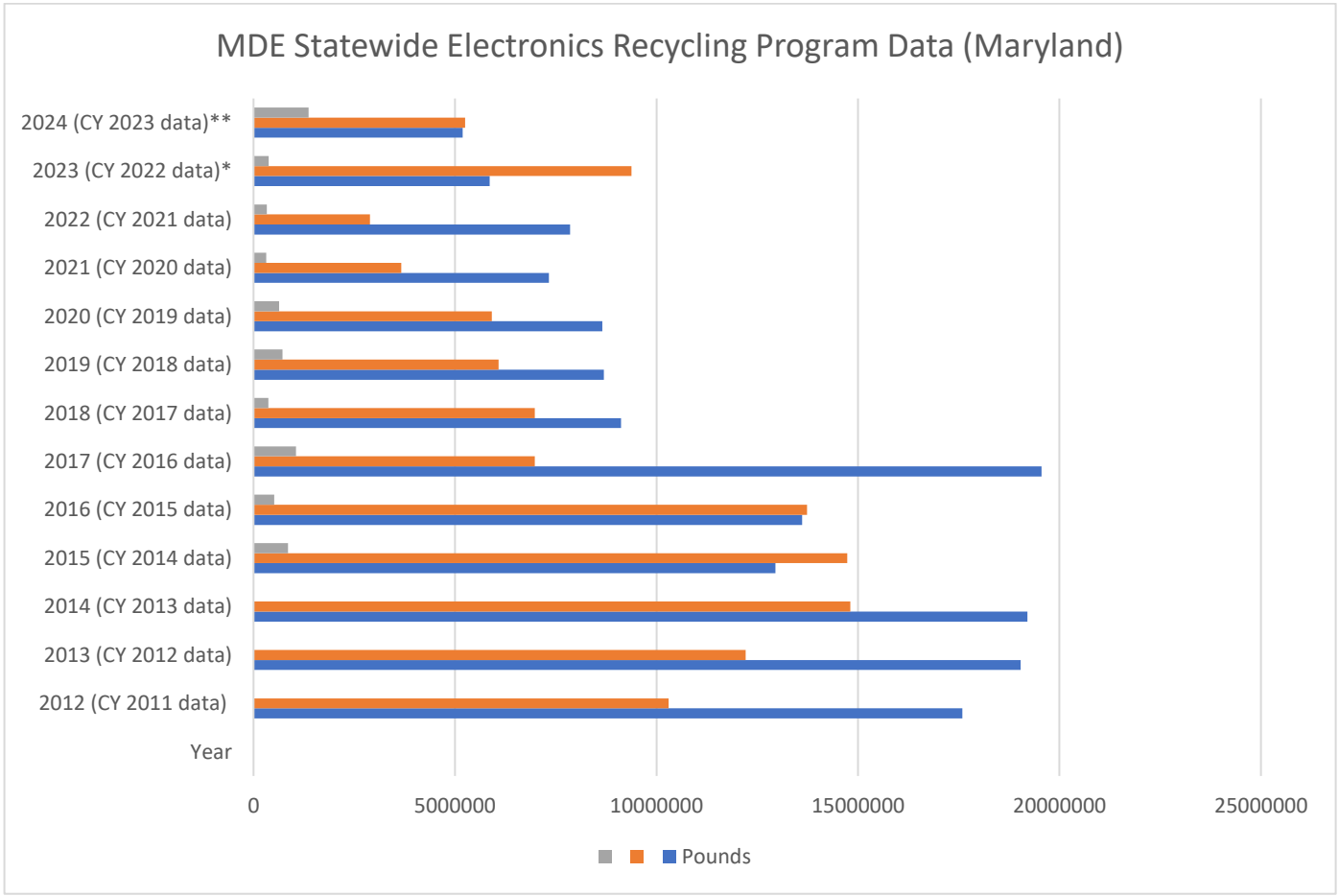
Table 2-1 Unadjusted Statewide Aggregate Disposed MSW Composition

	Material Category	Mean	MOE	Tons		Material Category	Mean	MOE	Tons
	Paper	**26.3%**	**1.4%**	**1,186,369**		**Glass**	**2.5%**	**0.4%**	**111,826**
1	Newsprint	0.2%	0.1%	8,443	1	Clear Glass Containers	1.5%	0.3%	67,468
1	Corrugated Cardboard/Kraft Paper	8.7%	0.9%	391,412	1	Brown Glass Containers	0.4%	0.2%	17,430
1	Magazines	0.4%	0.2%	16,698	1	Green Glass Containers	0.4%	0.2%	17,752
1	Paperboard/Packaging	2.1%	0.4%	93,351	4	Non-Container/Other Glass	0.2%	0.1%	9,176
4	Polycoated/Aseptic Pkg	0.3%	0.1%	13,434		**Organics**	**26.5%**	**2.2%**	**1,192,591**
1	High Grade Office Paper	0.4%	0.2%	19,578	3	Food Waste	18.8%	1.6%	849,756
2	Books	0.1%	0.1%	6,194	3	Grass	0.2%	0.2%	7,403
1	Other Recyclable Paper	1.9%	0.3%	85,962	3	Leaves	2.2%	0.9%	98,779
4	Paper Cups	0.5%	0.1%	23,364	3	Brush, Prunings, and Trimmings	1.3%	0.5%	59,624
3	Compostable Paper	7.7%	0.6%	346,148	4	Other/Non-Compostable Organics	3.9%	0.9%	177,027
4	Non-Recyclable Paper	4.0%	0.5%	181,785		**C&D**	**8.0%**	**2.6%**	**362,135**
	Plastic	**17.9%**	**1.2%**	**807,435**	3	Wood - Clean Lumber	0.2%	1.5%	7,345
1	PET (#1) Bottles/Jars	1.8%	0.2%	80,435	4	Wood - Painted/Treated	1.2%	0.6%	54,458
1	PET (#1) Other	0.5%	0.1%	20,541	2	Wood - Pallets	3.0%	1.2%	134,480
1	HDPE (#2) Bottles - Natural Only	0.4%	0.1%	20,061	4	Non-C&D Wood	0.1%	0.1%	4,725
1	HDPE (#2) Bottles - Colored Only	0.3%	0.1%	12,934	4	Drywall/Gypsum Board	0.2%	0.1%	7,797
1	HDPE (#2) Non-Bottle Containers	0.3%	0.1%	11,700	2	Concrete, Brick, Rock, Other C&D	1.8%	0.7%	79,501
1	PP (#5) Bottles and Containers	1.3%	0.1%	60,534	4	Carpet, Carpet Padding, & Rugs	1.6%	1.4%	73,829
1	PS (#6) Rigid Containers	0.3%	0.1%	13,941		**HHW**	**0.9%**	**0.2%**	**42,124**
1	#3, #4, #7 Products	0.0%	0.0%	1,928	4	Medical Waste & Sharps	0.3%	0.1%	14,388
4	Compostable Plastic Pkg	0.0%	0.0%	171	2	Batteries - Lead Acid	0.0%	0.0%	18
1	Durable Plastic Products	1.3%	0.3%	57,737	2	Batteries - Other Rechargeable	0.0%	0.0%	1,817
4	EPS "Styrofoam" - Food Pkg	0.2%	0.1%	8,483	2	Batteries - All Other	0.1%	0.0%	2,551
4	EPS "Styrofoam" - Non-Food Pkg	0.1%	0.0%	5,144	2	Other Haz Waste/Other HHW	0.5%	0.2%	23,350
2	Clean Commercial Film	1.9%	0.7%	87,837		**Electronics**	**0.5%**	**0.2%**	**20,697**
2	Clean Shopping Bags	0.4%	0.1%	17,371	2	Computers & Electronic Products	0.5%	0.2%	20,697
4	Contaminated/Other Film - Mono	5.2%	0.5%	235,805		**Other**	**14.0%**	**1.5%**	**632,360**
4	Contaminated/Other Film - Multi	1.7%	0.2%	76,513	2	Textiles & Leather Products	3.0%	0.6%	135,226
4	Remainder/Composite Plastic	2.1%	0.4%	96,299	4	Diapers & Sanitary Products	3.9%	0.7%	175,823
	Metal	**3.4%**	**0.5%**	**152,788**	4	Bulky Items	3.5%	0.8%	156,083
1	Aluminum Cans & Containers	0.7%	0.1%	33,543	2	Tires	0.1%	0.2%	5,644
2	Other Aluminum	0.4%	0.1%	17,816	4	Other/Not Elsewhere Classified	2.0%	0.5%	89,426
2	Other Non-Ferrous	0.6%	0.2%	28,022	4	Supermix - Bottom Fines & Dirt	1.6%	0.1%	70,158
1	Tin/Steel Containers	0.7%	0.1%	32,909					
2	Other Ferrous	0.9%	0.5%	40,498		**Total**	**100.0%**		**4,508,325**
						Samples	**110**		
1	*Curbside Recyclables*	23.6%		1,064,357	3	*Compostables/Mulchables*	30.4%		1,369,056
2	*Other Non-Curbside Recyclables*	13.3%		601,023	4	*Not Currently/Widely Recyclable*	32.7%		1,473,889



Source: [E-Scrap Newsletter Article (March 2015)]

MDE Statewide Electronics Recycling Program Data (Maryland)							
	Pounds						
Year	Residential/Municipal Program	Commercial	Manufacturer Program	Manufacturer Program Share of Total Pounds	Residential Program Share of Total Pounds	Commercial Share of Total Pounds	Total Residential, Commercial, Manufacturer Program (Pounds)
2012 (CY 2011 data)	17,591,221	10,302,000	N/A	N/A	63%	37%	27,893,221
2013 (CY 2012 data)	19,033,550	12,214,000	N/A	N/A	61%	39%	31,247,550
2014 (CY 2013 data)	19,208,026	14,808,000	N/A	N/A	56%	44%	34,016,026
2015 (CY 2014 data)	12,949,658	14,736,000	853,400	3%	45%	52%	28,539,058
2016 (CY 2015 data)	13,610,620	13,734,000	512,000	2%	49%	49%	27,856,620
2017 (CY 2016 data)	19,554,907	6,978,000	1,050,000	4%	71%	25%	27,582,907
2018 (CY 2017 data)	9,120,499	6,978,000	371,200	2%	55%	42%	16,469,699
2019 (CY 2018 data)	8,691,452	6,080,000	716,000	5%	56%	39%	15,487,452
2020 (CY 2019 data)	8,656,008	5,910,000	638,100	4%	57%	39%	15,204,108
2021 (CY 2020 data)	7,329,304	3,664,540	312,780	3%	65%	32%	11,306,624
2022 (CY 2021 data)	7,853,593	2,891,080	330,820	3%	71%	26%	11,075,493
2023 (CY 2022 data)*	5,857,420	9,376,220	374,000	2%	38%	60%	15,607,640
2024 (CY 2023 data)**	5,187,580	5,250,960	1,364,000	12%	44%	44%	11,802,540
Total	**154,643,838**	**112,922,800**	**6,522,300**	**2%**	**56%**	**41%**	**274,088,938**
Source: Maryland Solid Waste Management and Diversion Annual Reports: https://mde.maryland.gov/programs/land/Pages/LandPublications.aspx							
*Source: Email from MDE 2/4/25: Prince George's County collected 164.89 tons in CY 2022 and reported them as commercial.							
For the purposes of this data set, it is being reflected in the residential category (and subtracted from the commercial category).							
**Source: Email from MDE 2/6/26: Prince George's County collected 93.52 tons in CY 2023 and reported them as commercial.							
For the purposes of this data set, it is being reflected in the residential category (and subtracted from the commercial category).							
As of CY 2022: MDE stopped reporting special municipal events and now just reports total recycling reported by the Counties in the MRA survey.							



Manufacturer fees collected under existing law do not cover costs for local government to operate recycling programs. All grants provided to date are listed below:

MDE Electronics Recycling Grants to Local Government	
Fiscal Year	Total Grants Issued
2008	$190,000
2009	$616,552
2015	$500,000
2016	$250,000

Sources: Maryland Department of the Environment
2015 Electronics Recycling Department Workgroup
news.maryland.gov/mde/2016/07/22/department-of-the-environment-awards-grants-totaling-250000-for-electronics-recycling-in-maryland/

Electronics Recycling Pounds															
	CY 2012*	CY 2013**	CY 2014***	CY 2015	CY 2016	CY 2017	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	CY 2023^	CY 2024^	CY 2025^	**Total**
Anne Arundel County	2,928,311	2,848,253	593,091	550,000	448,433	493,930	478,733	477,788	407,989	395,133	406,000	366,000	352,783	387,340	11,133,784
Baltimore City	1,276,791	1,421,668	1,141,000	1,136,000	183,883	171,673	322,965	476,174	564,143	751,910	532,251	288,185	195,611	412,863	8,875,117
Baltimore County	3,640,420	3,618,293	841,802	729,653	722,172	650,381	624,480	512,060	604,080	511,520	410,943	556,049	1,011,822	896,460	15,330,135
Carroll County	917,006	699,522	133,757	122,861	109,180	108,180	124,300	120,260	138,340	110,960	98,512	75,500	93,920	100,240	2,952,538
Frederick County	703,320	619,221	631,160	585,180	352,892	347,780	739,420	245,760	207,580	178,920	177,800	165,020	188,560	199,020	5,341,633
Harford County****	314,500	281,260	327,180	244,420	246,740	250,260	252,240	213,680	275,240	230,940	191,620	165,000	128,780	116,500	3,238,360
Howard County	1,439,580	1,485,129	1,460,672	1,347,352	1,334,231	1,206,483	992,634	1,165,014	1,108,380	847,880	644,100	648,800	893,970	901,500	15,475,725
Montgomery County	3,519,553	3,861,679	3,095,423	3,204,878	3,035,387	2,847,060	2,271,940	2,440,209	2,462,261	2,471,820	2,224,880	1,920,400	2,134,320	2,430,060	37,919,870
Midshore Counties	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	146,940	146,940
Prince George's County	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	29,740	29,740
Total	**14,739,481**	**14,835,025**	**8,224,085**	**7,920,344**	**6,432,918**	**6,075,747**	**5,806,712**	**5,650,945**	**5,768,013**	**5,499,083**	**4,686,106**	**4,184,954**	**4,999,766**	**5,620,663**	**100,443,842**
*Total CY 2012 TVs/Computer Monitors under Anne Arundel County, Baltimore County and Carroll County program: 5,029,014 pounds															
**Total CY 2013 TVs/Computer Monitors under Anne Arundel County, Baltimore County and Carroll County program: 5,101,565 pounds															
***Beginning CY 2014, Anne Arundel County, Baltimore County and Carroll County no longer recycled TVs/Computer Monitors.															
****2012-2024: Harford County's recyclers sometimes accepted flat screen TVs/Computer Monitors for recycling; but did not recycle CRT glass TVs/Computer Monitors															
^Beginning FY '24 Baltimore County reintroduced TV/Computer Monitor recycling & Baltimore City's program paused due to contract awaiting execution by its Board of Estimates. Baltimore City service did not reinitiate until July 2024.															
Sources: Northeast Maryland Waste Disposal Authority data, Jurisdiction data, MES data, and MDE Maryland Recycling Act Report data															

Electronics Recycling Costs to Jurisdictions*															
	CY 2012	CY 2013	CY 2014	CY 2015	CY 2016	CY 2017	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	CY 2023^	CY 2024^	CY 2025^	**Total**
Anne Arundel County	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Baltimore City**	$0.00	$0.00	$101,353.16	Unknown	Unknown	$22,998.93	$90,364.65	$128,671.74	$157,526.67	$210,534.80	$149,030.28	$80,691.80	$66,747.76	$66,058.08	$1,073,977.87
Baltimore County	$0.00	$0.00	$0.00	$0.00	$0.00	$126,824.30	$121,773.60	$156,026.90	$170,999.40	$143,225.60	$115,064.04	$89,711.92	$80,945.76	$89,341.80	$1,093,913.32
Carroll County	$0.00	$0.00	$0.00	$0.00	$0.00	$20,770.56	$23,865.60	$37,280.60	$42,885.40	$34,397.60	$30,538.72	$18,881.00	$15,027.20	$16,038.40	$239,685.08
Frederick County***	$0.00	$0.00	$36,753.16	Unknown	Unknown	Unknown	Unknown	$34,160.64	$28,853.62	$24,869.88	$24,502.02	$20,811.90	$22,627.20	$23,882.40	$216,460.82
Harford County	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Howard County	$0.00	$0.00	$211,797.47	$195,366.08	$193,463.50	$193,037.28	$158,821.44	$197,481.16	$188,424.60	$141,089.80	$109,497.00	$53,723.40	$0.00	$0.00	$1,642,701.73
Montgomery County	$0.00	$0.00	$448,836.35	$464,707.34	$440,131.12	$455,529.60	$363,510.40	$475,527.06	$479,147.72	$482,806.12	$436,059.54	$181,908.58	$0.00	$0.00	$4,228,163.83
Midshore Counties	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	$18,000^^	$0.00
Prince George's County	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	$18,000^^	$0.00
Total	**$0.00**	**$0.00**	**$798,740.14**	**$660,073.42**	**$633,594.62**	**$819,160.67**	**$758,335.69**	**$1,029,148.10**	**$1,067,837.41**	**$1,036,923.80**	**$864,691.60**	**$445,728.60**	**$185,347.92**	**$195,320.68**	**$8,494,902.65**
*$0.00 refers to either $0.00 in costs or revenues to Jurisdictions and/or program years where Jurisdictions received revenues for their electronics															
**Baltimore City: July 1, 2014-December 31, 2014 cost data is unknown. January 1, 2017-September 30, 2017 cost data is unknown															
***Frederick County: July 1, 2014-December 31, 2014 cost data is unknown.															
^Beginning FY '24 Baltimore County reintroduced TV/Computer Monitor recycling & Baltimore City's program paused due to contract awaiting execution by its Board of Estimates. Baltimore City service did not reinitiate until July 2024.															
^^Total cost for electronics recycling in CY25 was ~$36K. The amount reflects electronics collected during HHW events that took place in Midshore/Prince George's Counties, so $36k was split evenly between the two counties for presentation purposes here.															
Sources: Northeast Maryland Waste Disposal Authority data, MES data and Local Jurisdiction data															

Global Electronics Information:

“The proliferation of electronic devices has contributed to the accelerated surge of greenhouse gas (GHG) emissions in e-waste, according to a new study in Circular Economy. E-waste GHG emissions rose 53 percent between 2014 and 2020. Researchers anticipate e-waste will annually generate 852 million metric tons of CO2 compounds by 2030…Increasing the useful lifespan expectancy of electronic devices by 50%–100% can mitigate up to half of the total GHG emissions," the study's authors stated. "Such outcomes will require coordination of eco-design and source reduction, repair, refurbishment, and reuse…The current global rate of e-waste recycling stands at 17.4 percent, with Europe and the Americas responsible for the majority of waste generated. The study noted that Europe's recycling rate stands above other countries at 42.5 percent, following by Asia at 11.7 percent and the Americas at 9.4 percent…Researchers found that between 2013 and 2020, "the useful lifespan of average electronic devices such as desktops, laptops, and smartphones decreased by 41%, 22%, and 30%, respectively.” Source: E-Waste Emissions Jump 53 Percent Between 2014 and 2020 (waste360.com)

Additionally, “as gadgets are replaced faster, global e-waste is growing five times quicker than it’s formally recycled. The world produced a record 62 million metric tons in 2022. That's expected to climb to 82 million by 2030, according to the United Nations’ International Telecommunication Union and its research arm, UNITAR” American e-waste is causing a 'hidden tsunami' in Southeast Asia, report says.

Health and Safety Specific Information

Lithium-ion battery management is one of the most pressing issues, if not the most pressing issue, in the solid waste management and recycling industry right now.

The solid waste management sector is already consistently ranked as one of the most dangerous, deadliest labor sectors in the United States:

"Waste and recycling collection was fourth deadliest occupation in 2023…The latest Bureau of Labor Statistics data showed an increase in the rate of fatalities for the refuse and recyclable materials collection occupation. The number of fatalities in MRFs also increased… Waste and recycling jobs remain a potentially hazardous occupation, despite ongoing efforts to get out of the top 10 deadliest job category by investing in more safety training and technology for vehicles and facilities. The only occupations that had higher fatality rates in 2023 were logging, fishing and hunting and roofing…Solid Waste Association of North America CEO Amy Lestition Burke said in a statement that the organization was "very disappointed" in the results. "This data reinforces the need for safety improvements. The individuals who collect waste and recycling are making communities livable and sustainable. We all have a role to play to protect these everyday heroes.. "The increase in solid waste collection worker fatalities is concerning, and occurred from coast to coast and at small haulers, the large publicly traded companies, and local governments," said David Biderman, a safety consultant and former SWANA CEO, in an emailed statement that also noted this was one of the highest rates in years. "There are a wide variety of contributing factors to these tragic incidents. We know what these factors are, and need to address them."[2]

"Solid waste collection workers are still on the list of the ten most dangerous jobs. From the truck itself to the collected garbage (***lithium-ion batteries,*** syringes, glass, and chemicals: MSW has a lot of unexpected hazards in store), from distractions like mobile phones to bad weather conditions, from pedestrians to other drivers: The sources of danger are manifold. And more waste means more risks... Safety campaigns and awareness have an effect…SWANA will continue leading industry efforts to reduce them even further and fulfill our Strategic Plan goal of getting solid waste collection workers off the list of the ten most dangerous jobs."[3]

Additionally, the Solid Waste Association of North America (SWANA), the National Waste & Recycling Association (NWRA), and the Recycled Materials Association (ReMA) released a joint "Guide for Developing Lithium-Ion Battery Management Practices at Materials Recovery Facilities" to offer practical steps for materials recovery facilities (MRFs) to better identify, manage, and respond to improperly discarded lithium-ion batteries. The guide is available here.

SB0655/HB0992 Electronic Device Producer Responsibility Program provides funding for collection sites to hire staff and, per Advisory Council recommendation, implement heat spot (thermal imaging) and fire detection and suppression technology, a critical safety measure as facility fires from lithium-ion batteries continue to increase.

[2] https://www.wastedive.com/news/waste-recycling-worker-fatality-rate-2024/735975/?utm_source=Sailthru&utm_medium=email&utm_campaign=Newsletter%20Weekly%20Roundup:%20Waste%20Dive:%20Daily%20Dive%2012-21-2024&utm_term=Waste%20Dive%20Weekender

[3] Workplace saftey: Getting waste collection off the list of the most dangerous jobs | WMW

It will relieve overburdened collection site staff (as many sites are understaffed). It funds staff dedicated solely for receiving and packaging all types of electronics. Workplace safety will improve, especially related to stacking and palletizing large, heavy electronics that have tipping risks when there are not enough staff to assist. Additionally, dedicated staff will be able to properly monitor and orderly pack electronics dropped off from the public, ensure battery embedded electronics are properly stored (so they are not inadvertently crushed in collection containers, etc.), and be able to identify and safely segregate and contain Damaged, Defective, or Recalled (DDR) battery embedded products for special handling collection contractors.

This will prevent recycling workers and first responders from ending up with health issues and death incidents from thermal runaway events, including exposure to lithium-ion battery toxic chemical flammable gas production, smoke, explosion, internal pressure rise, vapor cloud and fire.[4]

There were 245 fires reported across 64 waste facilities (during 2013–2020) caused or likely caused by lithium-ion batteries. Affected facilities included MRFs (Materials Recovery Facilities), solid waste trucks, landfills, transfer stations, public drop-off points, and electronics and battery recyclers. 78% of MRFs required emergency response for fires, with 43% facing monetary impacts. Lithium-ion battery fires are increasing due to the rise in portable, chargeable electronics and electric mobility such as scooters, bikes and vehicles. For full details, please see the EPA's Lithium-Ion Battery 2021 Report**.**

[4] *Source: Information on Thermal Runaway described above was covered at the December 5, 2024 *Commission to Advance Lithium-Ion Battery Safety in Maryland* meeting. James Milke (Ph.D., FSFPE, Professor Emeritus, University of Maryland, Senior Principal Engineer) presented to the Commission an "Overview of Lithium-Ion Battery Hazards and Protection Strategies."

THE FACTS

An overheating battery can go from from 212°F to 1,800°F in the blink of an eye. (Source: Clemson University.) When batteries ignite, they can throw off flames reaching temperatures of over 2000°F. (Source: National Institute of Standards and Technology.)

250+ FIRES IN 7 MONTHS

In the first seven months of 2025, there were more than **250 fire incidents at waste and recycling facilities across the U.S. and Canada**—more facility fires than any other period on record. (Source: Ryan Fogelman)

$22 MILLION PER FACILITY

Catastrophic losses caused by fires at waste processing facilities have **risen 41% in the last five years,** with the average catastrophic loss causing $22 million in damage. (Source: Recycle.com)

89+ DEATHS IN THE US

Since 2020, there have been at least **89 deaths** directly related to lithium-ion battery incidents in the United States, nearly a 50% increase from 2015-2019! (Source: UL Solutions)

Source: Safe Battery Disposal

EXTREME HEAT

When a battery overheats, it can jump from 212°F to 1,800°F in a second—and produce flames as hot as 2,000 °F! (Sources: Clemson University; National Institute of Standards and Technology.)

TOXIC GAS

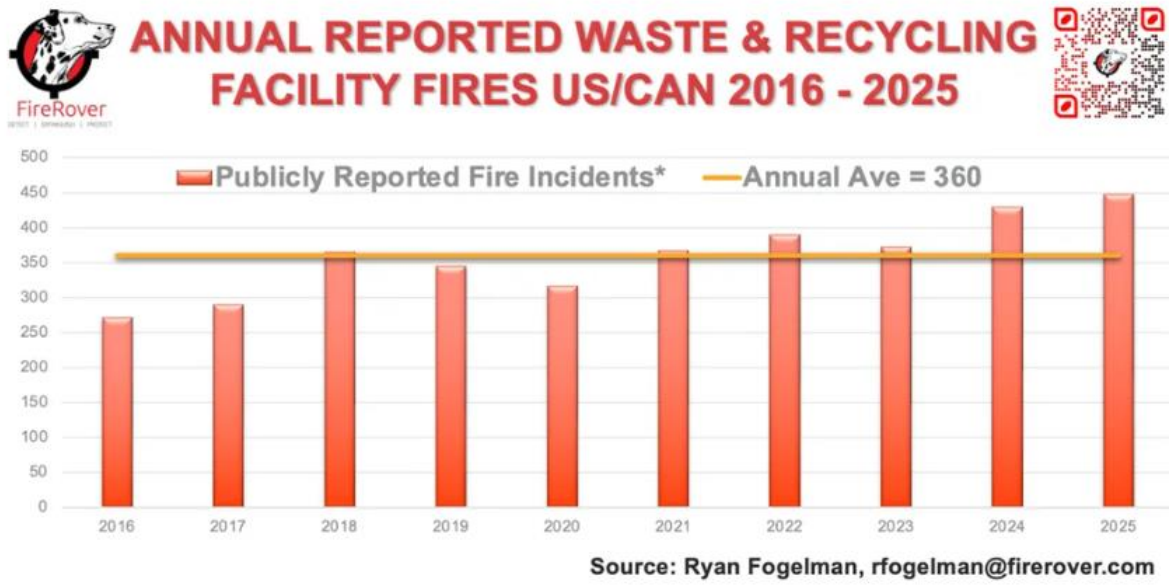
As lithium battery fires burn, they release toxic gasses like hydrogen fluoride and carbon monoxide. If inhaled, these fumes can lead to trouble breathing, eye and skin irritation, and in some cases, even death.

LONGER BURNING

Battery fires don't just burn hotter—they burn longer, too. These fires are extremely difficult for firefighters to put out, and they can quickly reignite without a moment's notice.

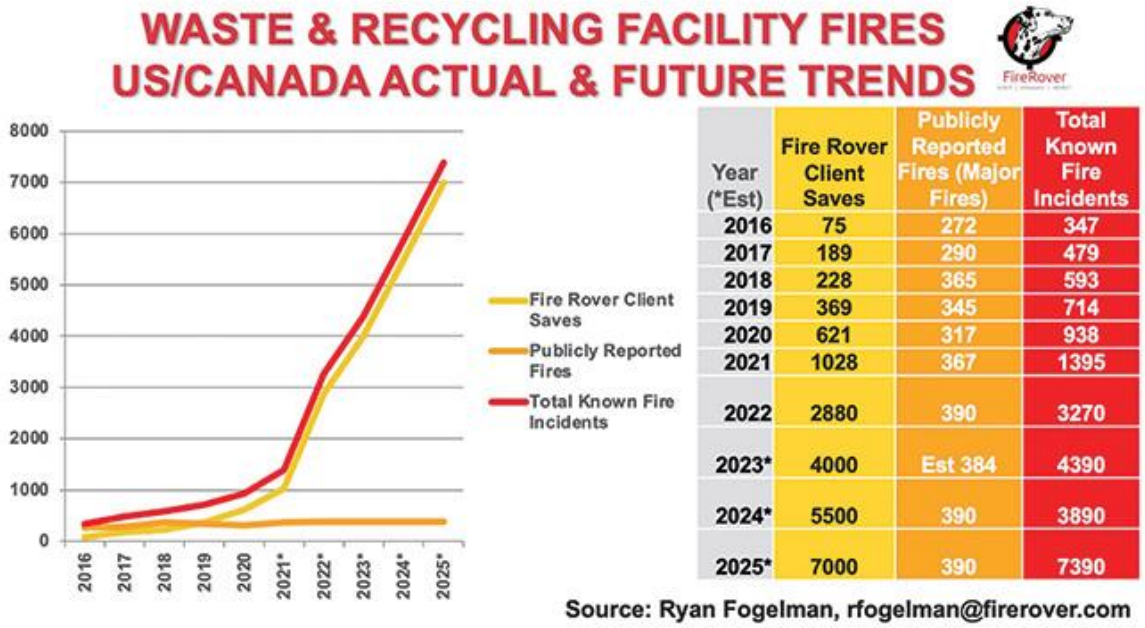
Source: Facts — Safe Battery Disposal

Slide from 1/27/26 EPA Virtual Roundtable Meeting



As of January 2026, "this year was the worst on record for publicly reported fires since I began consolidating and sharing the data in 2016. We finished the year with 448 publicly reported waste and recycling facility fires in the U.S. and Canada, which is more than last year's record of 430 fire incidents and nearly 25% above the annual average of 360 fire incidents."[5]

[5] January Fire Report, Date Accessed: February 15, 2026.



"Then came the lithium-ion battery threat that revealed itself in 2018 in the form of increased fire incidents across the globe…This problem is not going away. In fact, the number of lithium-ion batteries forecasted to enter the waste and recycling streams is only growing along with hotter and dryer environments, which leads to a breeding ground for increased fire incidents… The goal is not just to catch a fire when there are flames, but also to understand that there are situations where hot spots can be cooled before they flame. The goal is to set the tripwire as early in the process as possible. This can be done through top-grade thermal detection in combination with smoke, optical flame detection, and advanced data analytics—all coupled with a highly trained agent who is able to weed through false positives to fight only the incidents that need fighting… 2022 was (and 2023 is forecasted to be) the worst year for reported fire incidents …we are heading down a path where investments in solutions like the Fire Rover are considered 'critical' to successfully responding to the fire hazards that continue to hit our waste and recycling streams. We need a funding mechanism like the government or the battery manufacturers to help pay for the costs they have created... Investing in proper equipment for the fire department to use onsite can be a huge timesaver and lifesaver. Even going as far as having attached and rollout hoses so the firefighters can immediately start applying suppressant to the affected area can make a huge difference"

Source: Keys to Building a Successful MRF: Before, During, After - Waste Advantage Magazine)

Lastly, videos of lithium-ion battery caused fires are provided below for reference:

- https://youtu.be/8nz5ijXcckI?si=HqCA9p0OxftZ4KXK
- https://youtu.be/Vudxuqjscho?si=UspX6BmIM9rmeo5A
- Video: How quickly a battery fire can start - Inside Waste

Summary

SB0655/HB0992 Electronic Device Producer Responsibility Program is needed because:

- Most local governments are landfilling electronics due to recycling costs (or charging tipping fees to cover costs). Per the 2024 MDE Waste Characterization Study, ~41,394,00 pounds of electronics and computer products are landfilled in Maryland each year, with only about 13 years of remaining landfill capacity in the state, when factoring in population growth.
- Battery fires are increasing in the waste management sector. This program will divert battery devices to proper outlets, reducing incidents.
- It will also increase our domestic supply of rare-earth elements, critical minerals & precious metals, in high demand by the clean energy, electronics, auto and jewelry industries.

SB0655/HB0992 Electronic Device Producer Responsibility Program shall:

(1) Cover the costs of existing programs that local government is currently paying to recyclers to accept electronics
(2) Allow jurisdictions to retract existing electronics recycling tipping fees placed on their residents;
(3) Allow jurisdictions to expand financially restricted programs by providing the funds to cover recycling of previously excluded electronics that were ending up disposed; and
(4) Expand green collar jobs, including local businesses such as certified recyclers in Maryland, due to new demand for staffing at collection sites and recycling facilities.
(5) Increase human and environmental health & safety, especially for waste workers & first responders by funding a statewide campaign to educate the public about recycling outlets for electronics and battery devices, as well as on the dangers of lithium-ion battery fires. The campaign will promote free public collection sites for material drop-off to keep these materials out of curbside waste and recycling collection trucks, since battery devices are causing fires on trucks & at waste and recycling facilities. It aligns with Recommendation #1 (page 5) & Finding #3 (page 22), in Final Recommendation Report of the Commission to Advance Lithium-Ion Battery Safety in Maryland (dated November 25, 2025).

Under this program,

- Manufacturers must provide educational materials with a new electronic device offered for sale in the state. This includes providing printed materials in or part of the packaging and/or on the receipt, with a website, phone number and/or QR code.
- As part of the Advisory Council process, manufacturers may be determined to fund public awareness campaigns to advertise and promote this on a regular basis, including ads on the internet, television, radio, billboard, public transit, solid waste collection truck wraps or decals, and home mailers.

These updates will fully support and fund electronics recycling operations, infrastructure and administration statewide, incentivizing a system of convenience and accessibility for all Maryland residents and businesses to be able to participate equally, especially underserved rural and urban areas.

Additional Details

1) Modernizes the existing Statewide Electronics Recycling Program (SERP), enacted in 2005. Establishes a producer funded model to fully fund electronics recycling programs statewide. The bill will insulate programs from unpredictable commodity markets, recession and inflation, to fully fund both collection sites and recycling operations, while also funding MDE's administrative efforts and program oversight.

2) Establishes an Oregon modeled producer responsibility organization/coordinating body system in Maryland (with some elements of the Illinois and Connecticut electronics laws), to fund end-of-life electronics collectors and recyclers. Local/State government agencies are not required to participate in program.

3) Electronic device collectors (such as local government or retailers) are eligible to be reimbursed for the costs of end-of-life electronics on-site collection, storage, equipment, transportation, staffing, and public education efforts..

4) Recyclers are eligible to be reimbursed for electronic device collection, transportation, recycling, refurbishment and reuse.

5) Participating collectors and recyclers are required to accept all end-of-life covered electronic device makes and models with no charge to the public (residents and businesses).

6) Terminates the scarcely used manufacturer takeback programs as option under the SERP (which currently allow for reduced annual fees).

7) It will provide stronger environmental protections by authorizing MDE to establish:
a. Baseline of participating recycler requirements and certifications, as needed.
b. Baseline of participating collector requirements and certifications, as needed.

8) Authorizes MDE to establish reasonable caps on reimbursement rates for participating recyclers and collectors, as needed.

9) Expands devices covered for funding under the program, from items with a screen, to all of the following household electronics like computers, monitors, televisions, video display devices, desktop computers, portable computers, notebook computers, laptops, e-reading devices, tablets, routers, modems, CPUs, printers, scanners, fax machines, copiers, GPS, cameras, radios, remotes, headphones/earbuds, power strips, servers, DVD/VHS players/recorders, digital converter boxes, cable/satellite receivers, video game consoles, home audio equipment, speakers, electronic music players, computer peripherals, and PDAs.

10) Establishes an Advisory Council made up of a variety of stakeholders to continuously evaluate and recommend program updates to MDE, as needed. MDE maintains ultimate authority over the SERP. The Advisory Council shall make recommendations on:

- An expansion of the types of electronics covered under the program
- Increasing producer funded free public access to include additional drop-off sites, mandated retailer takeback, mail back programs, or at-home, curbside pickup service to further incentivize convenience and participation in the program

- Producer funded battery fire detection (e.g. thermal/heat spot imaging) and suppression systems and equipment to safeguard collection sites, waste facilities and vehicle operations
- Requirements on the reuse, refurbishment and recyclability of electronics, including the potential for eco-modulation and accessibility for repair redesign. This could also include post-consumer content and greenhouse gas reduction manufacturing goals when considering product design.

Local Government Reported Electronic Battery Powered Device and Battery Related Major Fires at Solid Waste Sites, Facilities and Curbside Collection Trucks		
	CY 2024	CY 2025
Anne Arundel County	There was a roll-off container fire at the Northern Recycling Center residential drop-off facility and an overnight fire in the public electronics collection area, that burned for hours.	In 2025 there was a total of two (2) fires attributed (or suspected) to be from the origin of electronics/batteries at Anne Arundel County Bureau of Waste Management facilities. Both incidents occurred at the residential drop off facilities. One was at the Central Recycling Center and one was at the Southern Recycling Center.
Baltimore City	Two fire incidents related to electronics in summer 2024. The electronics were brought in as part of the single stream recycling and MSW loads.	In 2025 there was a total of 3 fires attributed to electronics. One was at the Northwest Transfer Station where the material was included in a recycling load. The other two were at the Quarantine Road Landfill, where materials with batteries were disposed of and caught fire. One fire was pretty significant where it occurred overnight and reignited hours later.
Baltimore County	For CY 2024, there were 6 fires. 4 in the baler. 1 on the paper belt. 1 in a trailer.	4 major fires at County sites in 2025. 3 on tip floors and 1 in a trailer. Specifically, an entire trailer burned down to the ground at the Eastern Sanitary Landfill. Hard to say origin but assumed to be caused by electronic vapes since there were a large pack of vape pens found at the bottom of the trailer after the fire was extinguished.
Carroll County	One landfill working face fire near the surface. Two attempts needed to fully extinguish. Small transfer	Small transfer station floor flare-ups occur somewhat regularly, typically traced to small lithium

	station floor flare-ups occur regularly, typically traced to small lithium batteries (vapes and the like). One hauler reported a collection truck fire traced to vape batteries.	batteries (vapes and the like). At least one hauler reported a collection truck fire traced to a lithium battery.
Frederick County	This is true for 2025 as well, but there are an average of 2-4 small fires per month in the transfer station. Most are caught early and are small and can be extinguished with a handheld extinguisher. Causes of fires vary, but batteries are suspected in some cases. This is also true for 2025, but there have been a handful (approximately 2 per year) of fires in trucks on recycling collection routes. Again, causes vary but batteries are suspected in some cases	4/30/2025: A loaded trailer stored overnight on site caught fire. It took approximately 20,000 gallons of water to extinguish and the trailer was a total loss. Some evidence of electronics containing rechargeable batteries was found in the load. 12/24/25: A battery was brought in with a load of recycling and dumped on the transfer station floor. The loader bucket crushed the battery, causing a flash and it was pushed into a pile of recycling. The recycling soon caught fire and the operator caught it in time to segregate the burning material and push it to the door of the building before the entire pile caught on fire. The County has this incident on video tape and can share it, if requested.
Harford County	No information available for 2024.	The Harford Waste Disposal Center had three (3) fires in CY2025 that were beyond smoldering. Two (2) were on the active fill and one (1) was in a dumpster at the homeowner drop-off area. All were contained using on hand fire extinguishers and the water truck that is kept on standby.

Howard County	Experienced battery related fires at the electronics public drop off area, including two fires (one from an electric scooter), and six fires on curbside trash and recycling routes.	The County had 1 fire on the curbside routes and 1 fire at the landfill that required the fire department to be called. The County assumes they both started from a battery based on how difficult they were to put out.
Montgomery County	Although other fires were reported only the following were related to batteries or electronics. In 2024, the Shady Grove Transfer Station had 4 fire related incidents attributed to batteries (1 at the MRF and 3 on the Tipping Floor), and 1 fire related to an electric ballast)	Although other fires were reported only the following were related to batteries or electronics. In 2025, the Shady Grove Transfer Station had 9 fire related incidents attributed to batteries (3 in scrap metal collection area, 1 at the MRF and 5 on the Tipping Floor)

Source: Northeast Maryland Waste Disposal Authority Member Jurisdiction Survey