

Quarterly Update on California's Covered Electronic Waste Recycling Program Implementation of the Electronic Waste Recycling Act of 2003

Fourth Quarter 2023

Overview

The Electronic Waste Recycling Act of 2003 (Act), as amended and codified in the Public Resources Code (PRC) 42460, et seq., established a funding mechanism to improve and provide for the proper end-of-life management of certain hazardous electronic products. A fee paid by consumers of covered electronic devices (CED) at the time of retail purchase funds the program. Retailers remit collected fees to the California Department of Tax and Fee Administration (CDTFA), who deposits the funds in the Electronic Waste Recovery and Recycling Account (EWRRA). Approved recyclers and collectors of covered electronic waste (CEW) subsequently receive payments to offset the average net cost of compliant recovery, processing, and recycling activities.

Major Components of the Act

- Assesses an electronic waste recycling fee on retail sales of CEDs.
- Tasks the Department of Resources Recycling and Recovery (CalRecycle) with administering a payment system for collectors and recyclers to cover the average net costs of recovering, receiving, processing, and recycling CEW.
- Authorizes the Department of Toxic Substances Control (DTSC) to develop regulations for the proper management (collection, storage, and recycling) of CEW.
- Establishes certain manufacturer responsibilities: consumer information, brand labeling, annual reporting, product design for recycling, and reduction of hazardous materials.

Covered Electronic Devices

CEDs are video display devices that have a screen greater than four inches measured diagonally and have also been determined by the Department of Toxic Substances Control (DTSC) to exhibit hazardous characteristics when disposed. Unless excluded by PRC 42463(f)(2) and (g)(2), CEDs include:

- Cathode Ray Tube (CRT) devices
- CRTs
- CRT-containing computer monitors
- LCD-containing laptop computers
- LCD-containing desktop monitors
- CRT-containing televisions
- LCD-containing televisions (excluding LCD projection televisions)
- Plasma televisions (excluding plasma projection televisions)
- Portable DVD players with LCDs
- Organic light-emitting diode (OLED)-containing televisions
- OLED-containing laptop computers
- OLED-containing tablets
- OLED-containing desktop monitors
- LCD-containing tablets
- LCD-containing smart displays

Revenue and Payment Status

CalRecycle has the statutory obligation to adjust the CEW recycling fee to maintain fund solvency.

In June 2023, CalRecycle performed a CEW recycling fee assessment and made a determination to maintain the CEW recycling fee levels at the current rates of \$4, \$5, and \$6 per device (depending on the screen size).

Annual Total Revenue from CEW Recycling Fees (from FY 23/24 California Budget)

FY 2021/22 ~ \$82M / FY 2022/23 ~ \$83M / FY 2023/24 ~ \$59M

- Consumers pay a recycling fee to retailers at the point of sale based on the size of the device's screen.
- Effective January 1, 2020, the fee is \$4, \$5, and \$6, depending on screen size.
- Retailers remit collected fees to the CDTFA and retain 3% for administrative costs.
- Manufacturers are required to notify retailers regarding which products are subject to the fee.

CEW Recycling Program Participants (as of December 2023)

Approved Collectors: ~273*

Approved Recyclers: ~21

* Includes Approved Collectors that are also Approved Recyclers.

- Growth in California's electronic waste collection and recycling infrastructure has been fostered by the Act and the CEW Recycling Program.
- Voluntary participation includes a diverse group: non-profit organizations, solid waste management companies, local governments, and traditional e-waste collection and recycling businesses.
- DTSC inspections of recycling facilities and compliance with environmental standards are required for participant approval and eligibility to receive payments.
- The infrastructure to recover CEW also recovers substantial quantities of miscellaneous electronic waste, the handling of which is not funded by the CEW Recycling Program.

CalRecycle pays approved recyclers the combined recovery and recycling payment; approved recyclers are required to pay collectors the recovery payment. Based on industry cost data reported by approved collectors and recyclers, analysis of this data, and industry trends, CalRecycle acted in May 2023 to increase all the payment rates. Effective July 1, 2023, the recovery rate for all CEW due to collectors is \$0.35 per pound. The combined recovery and recycling payment rate for CRT CEW is \$0.98 per pound and for non-CRT CEW is \$1.10 per pound.

Year to Year Comparison (based on claim reporting month):*

2005 total 216 claims submitted: \$ 31 M (~ 64 M pounds)
2006 total 283 claims submitted: \$ 61 M (~ 127 M pounds)
2007 total 350 claims submitted: \$ 88 M (~ 184 M pounds)
2008 total 403 claims submitted: \$ 96 M (~ 220 M pounds)
2009 total 300 claims submitted: \$ 72 M (~ 185 M pounds)
2010 total 251 claims submitted: \$ 75 M (~ 194 M pounds)
2011 total 298 claims submitted: \$ 77 M (~ 198 M pounds)
2012 total 314 claims submitted: \$ 83 M (~ 212 M pounds)
2013 total 274 claims submitted: \$ 79 M (~ 202 M pounds)
2014 total 269 claims submitted: \$ 77 M (~ 183 M pounds)
2015 total 247 claims submitted: \$ 77 M (~ 175 M pounds)
2016 total 208 claims submitted: \$ 72 M (~ 153 M pounds)
2017 total 222 claims submitted: \$ 63 M (~ 128 M pounds)

2018 total 229 claims submitted: \$ 51 M (~ 101 M pounds)
2019 total 240 claims submitted: \$ 47 M (~ 90 M pounds)
2020 total 206 claims submitted: \$ 50 M (~ 74 M pounds)
2021 total 204 claims submitted: \$ 56 M (~ 73 M pounds)
2022 total 215 claims submitted: \$ 58 M (~ 64 M pounds)
2023 total 201 claims submitted: \$ 66 M (~ 63 M pounds)

*Please note that as of January 2018, the tracking of these values was standardized to remove claims that were rejected due to regulatory deficiencies or claimant request.

Year to Year CRT vs Non-CRT Unit Comparison (based on claim reporting month)*

2015 units transferred: 2.6M total, 2.2M CRT (84%), 0.4M Non-CRT (16%)
2016 units transferred: 2.4M total, 1.8M CRT (76%), 0.6M Non-CRT (24%)
2017 units transferred: 2.2M total, 1.4M CRT (63%), 0.8M Non-CRT (37%)
2018 units transferred: 1.9M total, 1.0M CRT (54%), 0.9M Non-CRT (46%)
2019 units transferred: 2.0M total, 0.8M CRT (41%), 1.2M Non-CRT (59%)
2020 units transferred: 1.7M total, 0.6M CRT (33%), 1.2M Non-CRT (67%)
2021 units transferred: 1.9M total, 0.5M CRT (24%), 1.5M Non-CRT (76%)
2022 units transferred: 2.0M total, 0.3M CRT (16%), 1.7M Non-CRT (84%)
2023 units transferred: 2.1M total, 0.2M CRT (11%), 1.8M Non-CRT (89%)

*Unit type (CRT or non-CRT) data only available/complete for 2015 reporting months and after.

Payment Statistics 2005 through December 2023

- Approximately 4,930 claims submitted by recyclers for payment.
- Approximately 18.8M total units, 8.8M CRT (47%), 10M non-CRT (53%), have been transferred during the reporting months of January 2015 to December 2023.
- Approximately \$1.3 billion dollars have been claimed through the CEW Recycling Program since January 2005.

CalRecycle has annually denied between 1% and 12% of moneys claimed in the CEW Recycling Program due to non-compliant or significant inconsistencies in documentation (see 14 CCR 18660.30...). Total payment adjustments from the start of the program through December 2023 is about \$30 million (~ 2.4% of claimed).

Compliance Assurance and Fraud Prevention

- CalRecycle works closely with DTSC to ensure material handling compliance. The departments have a Memorandum of Understanding that delineates cooperation on regulatory and enforcement responsibilities.
- CalRecycle has statutory authority to impose administrative civil penalties against any person for false statements or representations made in documentation for the purpose of compliance with the Act and associated regulations.
- CalRecycle works with the Department of Food and Agriculture's Weights and Measures Division to ensure accurate and legal measurements within the electronic waste recycling industry.

Current Challenges

- CalRecycle must ensure that payment is made in a timely manner only for eligible and compliantly documented CEW; specifically, through complete and verifiable payment claims,

including applicable source, collection, transfer, processing, and residual disposition documentation.

- The program must accommodate continued use (resale, reuse) as a possible destination for recovered CEW, but only pay for cancelled (dismantled) CEW.
- The program allows for certain instances of CEW resulting from illegal abandonment to enter the payment system while simultaneously not creating a portal for fraudulent activities.
- The use of “handlers” outside the CEW Recycling Program by approved recyclers and collectors exposes participants to increased risk of faulty and/or falsified collection documentation.

Costs of Managing Non-CRT CEW

- Program is seeing an increase in non-CRT devices being cancelled and claimed for payment, which have different recycling economics. Non-CRT’s:
 - Are more difficult to dismantle and require longer processing times than CRT devices.
 - Have less intrinsic material value than CRTs due to miniaturization (for e.g., circuit boards contain fewer precious metals); and
 - Contain residuals that are fully regulated hazardous waste that entail high disposal costs (e.g., plasma panels) or that require special handling (e.g., fluorescent lamps).
- In the first 6 years of the program, less than 1% (by weight) of CEW claimed were non-CRT devices.
- CRT volume began an annual decline starting in 2012, while non-CRT volume continues to increase.
- Non-CRT units surpassed CRT units in 2019, and claimed volume of non-CRT CEW, measured by weight, surpassed that of CRT CEW in 2021.
- In 2023, non-CRT made up about 73% (46.1M pounds), measured by weight, of total volume of CEW claimed for payment.
- In 2018, CalRecycle promulgated emergency regulations to bifurcate the combined recovery and recycling payment rate made to approved recyclers to establish separate rates for CRT and non-CRT CEW. The emergency regulations were readopted in 2020 and finalized in 2022.

Other Program Implementation Activities

Expansion of the Electronic Waste Recycling Act

- In 2022, [Senate Bill \(SB\) 1215](#) was passed by the Legislature and signed by the Governor. The bill amends the Electronic Waste Recycling Act and adds covered battery-embedded products to the CEW Recycling Program.

https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220SB1215

Annual Net Cost Reporting

- Program participants must report annually on costs to handle and process CEW. This information is used to inform CalRecycle’s obligation to adjust payment rates pursuant to PRC 42477 and 42478.
- Net Cost Reports must be submitted by all approved collectors and recyclers on or before March 1st.

Other States and the Federal Government

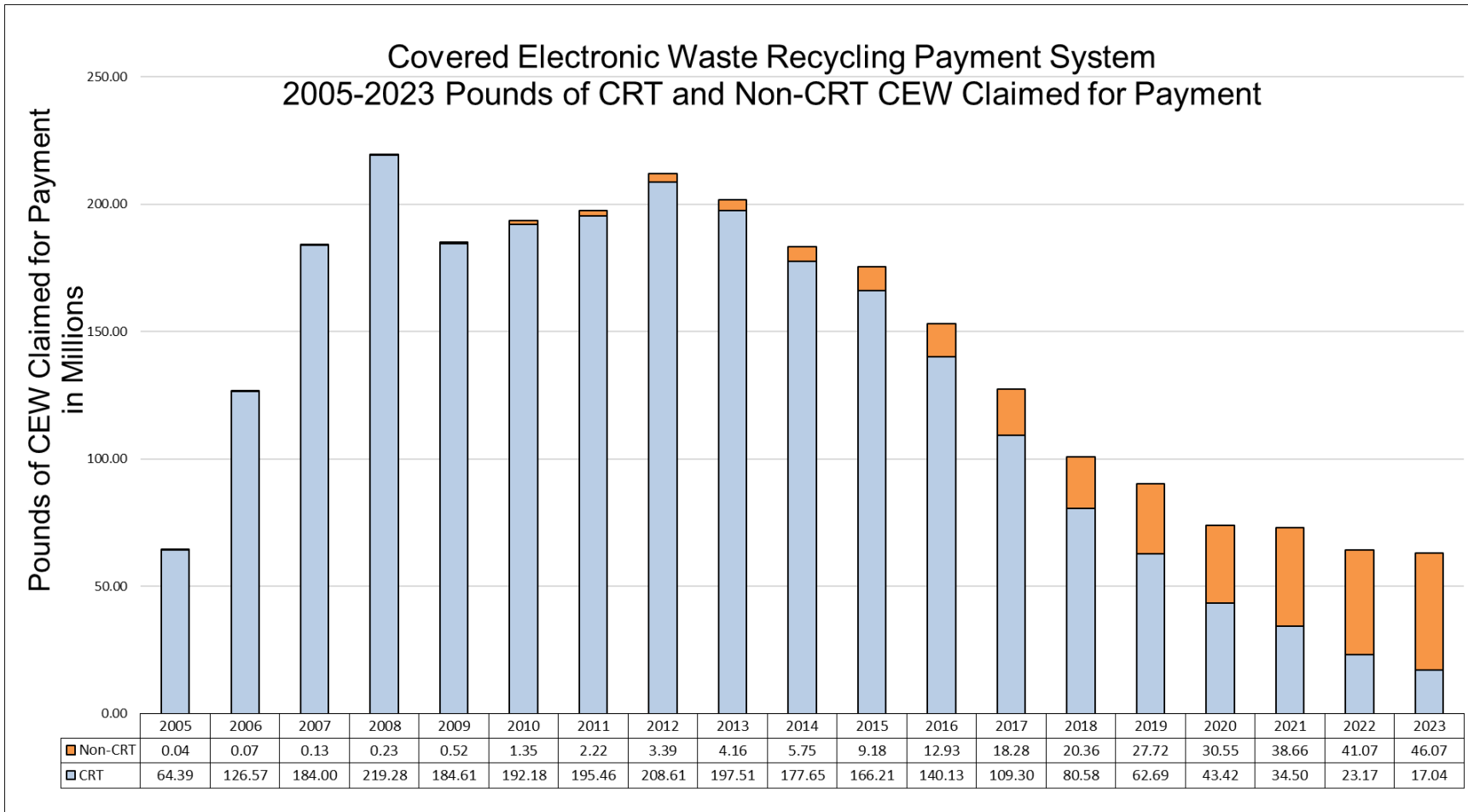
California is monitoring e-waste management laws throughout the nation. Approximately two dozen states have passed e-waste extended producer responsibility legislation. A large CEW Recycling Program challenge – ensuring payment only for devices that were used in California – would be

minimized or eliminated by a national-level program. However, any national system should provide cost relief to local governments and not contradict the hazardous waste/universal waste management standards adopted by DTSC. The Act specifies conditions under which a national program would preempt the Act (PRC 42485 (a)).

Outreach and Other Resources

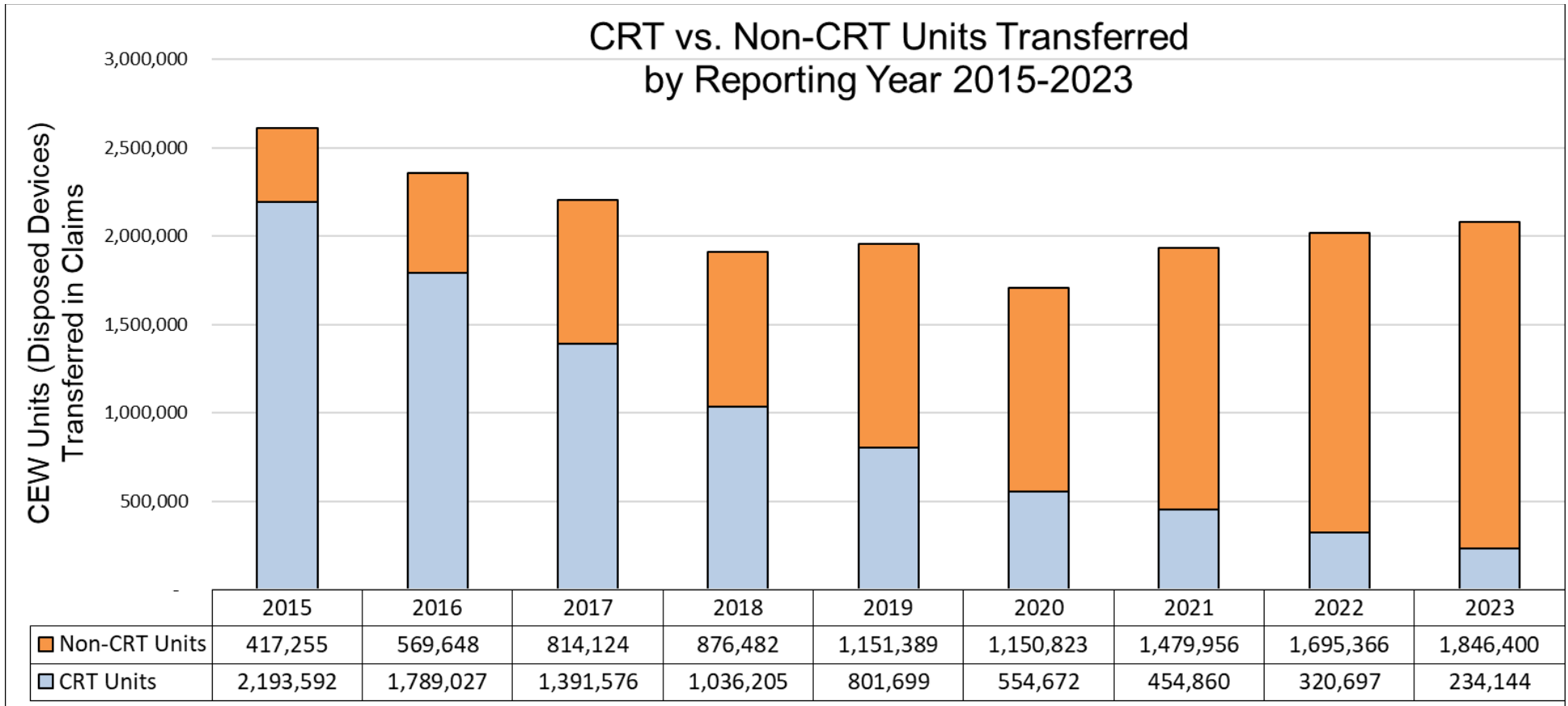
- [CalRecycle's Electronic Waste Management webpage](http://www.calrecycle.ca.gov/electronics) informs the public on environmental matters associated with the management of electronic waste, including a directory of recycling opportunities throughout California. www.calrecycle.ca.gov/electronics
- [The Department of Tax and Fee Administration's Covered Electronic Waste Recycling Fee Guide](https://www.cdtfa.ca.gov/taxes-and-fees/covered-electronic-waste-recycling-fee/) is a resource intended to help the public better understand the Covered Electronic Waste Recycling Fee and the obligations of CED retailers and consumers in California. <https://www.cdtfa.ca.gov/taxes-and-fees/covered-electronic-waste-recycling-fee/>
- [The Department of Toxics Substances Control website](https://dtsc.ca.gov/electronic-hazardous-waste/) contains information on covered devices, hazardous waste management standards, and regulatory requirements. <https://dtsc.ca.gov/electronic-hazardous-waste/>

2005-2023 Pounds of CRT and Non-CRT CEW Claimed for Payment



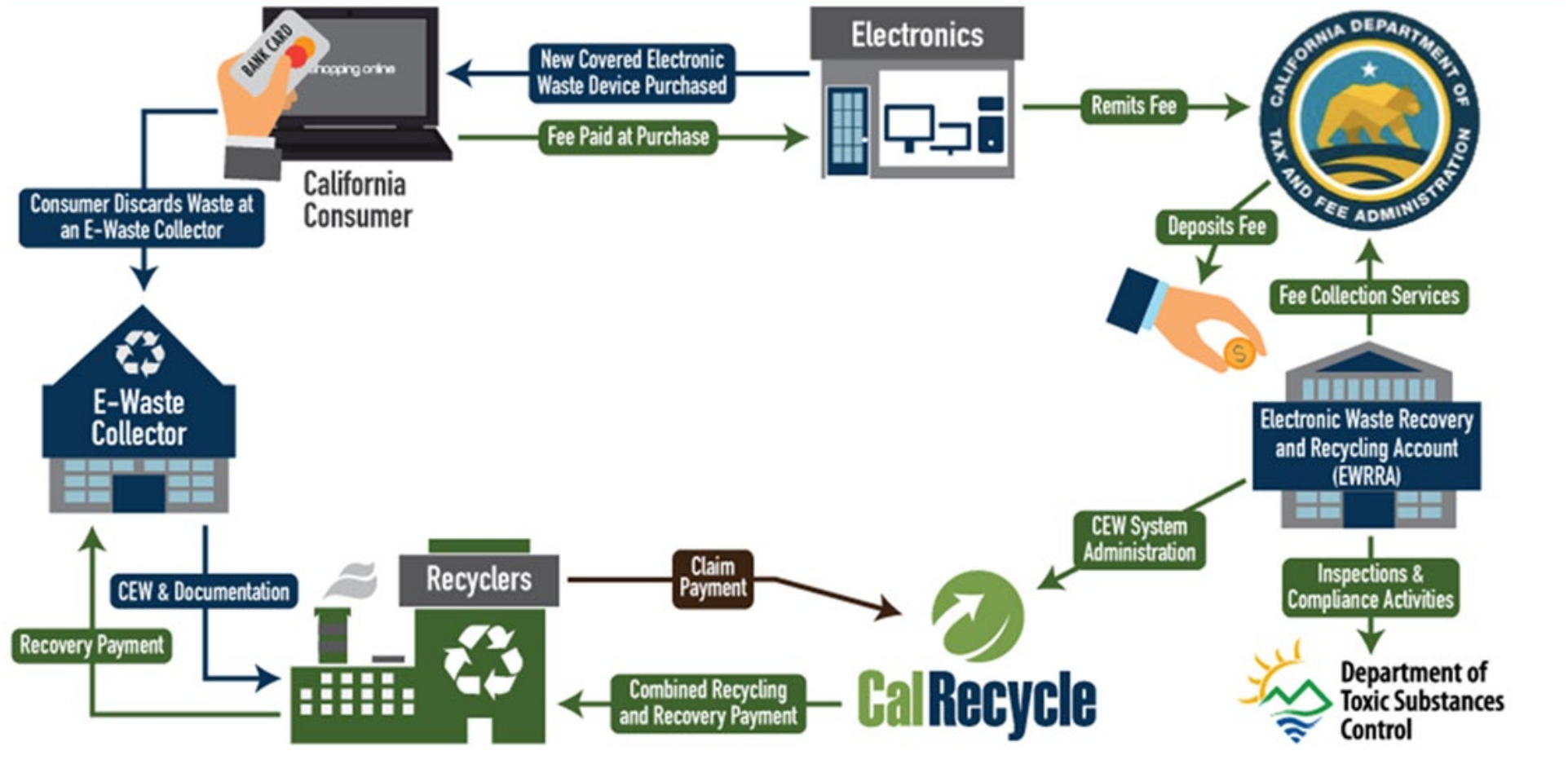
***Comments on the Covered Electronic Waste Recycling Payment System Chart:** The depiction of claim volumes in the chart reflects the evolution of the program from its inception in January 2005 through December 2023. Factors affecting the fluctuating volumes in the program include infrastructure development, the digital television broadcast transition in 2009, CRT glass market disruptions, and legacy stockpile depletion.

2015-2023 Units of CRT and Non-CRT CEW Transferred



Covered Electronic Waste Flowchart

Flowchart of Material and Funds within the State of California's Covered Electronic Waste Recycling Program



Legend: Electronics: → Funds: → CED: Covered Electronic Device CEW: Covered Electronic Waste

Appendix 1

Year	CRT Pounds Claimed	Non-CRT Pounds Claimed
2005	64,389,782	43,035
2006	126,567,589	70,698
2007	184,001,227	128,645
2008	219,279,718	234,385
2009	184,608,662	518,186
2010	192,183,827	1,354,261
2011	195,464,611	2,220,497
2012	208,612,778	3,390,096
2013	197,514,080	4,159,422
2014	177,646,847	5,754,842
2015	166,208,186	9,179,570
2016	140,132,266	12,931,644
2017	109,299,702	18,281,932
2018	80,580,813	20,357,824
2019	62,690,095	27,721,381
2020	43,421,265	30,552,244
2021	34,496,452	38,658,389
2022	23,169,414	41,066,955
2023	17,039,670	46,065,059

Appendix 2

Year	CRT Units	CRT Percent	Non-CRT Units	Non-CRT Percent	Total Transferred Units
2015	2,193,592	84%	417,255	16%	2,610,847
2016	1,789,027	76%	569,648	24%	2,358,675
2017	1,391,576	63%	814,124	37%	2,205,700
2018	1,036,205	54%	876,482	46%	1,912,687
2019	801,699	41%	1,151,389	59%	1,953,088
2020	554,672	33%	1,150,823	67%	1,705,495
2021	454,860	24%	1,479,956	76%	1,934,816
2022	320,697	16%	1,695,366	84%	2,016,063
2023	234,144	11%	1,846,400	89%	2,080,544

Appendix 3

When a California consumer buys a CED from a retailer, the consumer pays a recycling fee that funds the CEW Recycling Program. The retailer collects those fees and remits them to CDTFA, who deposits the funds in the EWRRA. Approved recyclers and collectors of CEW subsequently receive payments to offset the average net cost of compliantly recovering, processing, and recycling CEW. CalRecycle pays approved recyclers the combined recycling and recovery payment, and recyclers pass the recovery payment on to the approved collectors who recovered the CEW. CalRecycle works closely with DTSC, who is responsible for regulating and enforcing the physical management of e-waste. DTSC conducts inspections and compliance activities with recyclers and collectors.