



# Universal Waste 101

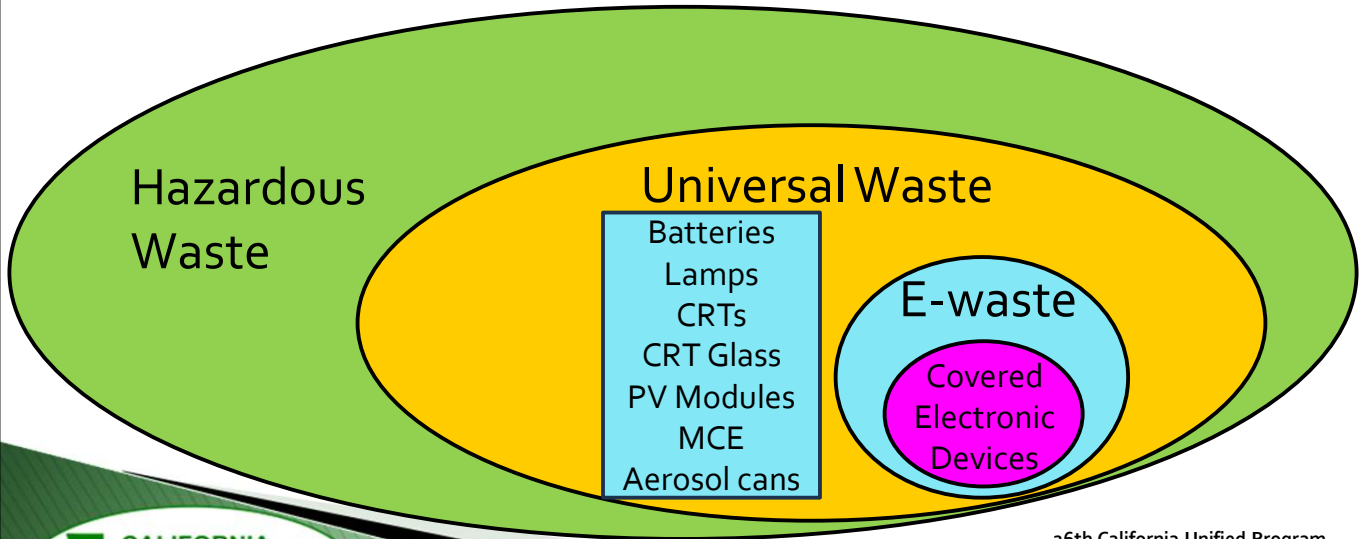
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02/27/2024



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## What is a Universal Waste?



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## Types of Universal Waste (UW)

California UW	Federal UW
Batteries	Batteries
Lamps	Lamps
Mercury-Containing Equipment	Mercury-Containing Equipment
Aerosol Cans*	Aerosol Cans
--	Pesticides
Electronic Devices	--
CRTs	--
CRT Glass	--
PV Modules	--

\* (see HSC 25201.16)



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## What isn't a Universal Waste?

- Appliances
- Electrical waste
- Items that could qualify to be managed as UW, but are being disposed of (so must be managed as HW)



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# Appliances

Appliances are not e-waste, with the notable exception of microwaves, which may be managed as **either** e-waste **or** an appliance

Appliances (also known as “white waste”) include:

- Refrigerators
- Washers and dryers
- Water heaters
- Air conditioners
- Stoves and furnaces
- Ovens



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# Appliances

- Some e-waste facilities are also appliance recyclers. An appliance recycler who removes Freon, used oil, etc. from appliances (also known as **MRSH** -- Materials that Require Special Handling) must be **certified** by DTSC. This certification is known as a CAR (Certified Appliance Recycler)
- DTSC processes certifications of appliance recyclers around the state. There are currently hundreds of CARs; the certification they receive does not mean the appliance recycler has been inspected by DTSC, “approved,” or found in compliance, just that they are allowed to remove MRSH from appliances
- For more information on DTSC’s CAR Program, see <https://dtsc.ca.gov/certified-appliance-recycler-car-program/>



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## Electrical Waste

**E-waste** contains *circuitry*, i.e., printed circuit boards, that provide a variety of functions **not** found in simpler **electrical equipment**

Electrical equipment can usually be switched on or off (or, absent a switch, be plugged in to work, or not) but generally cannot perform other functions. Electrical items do not contain circuit boards

- Whether something has a **circuit board** or not generally draws the line between what is e-waste, and regulated by DTSC, and what is electrical waste, and not regulated



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## Electrical Waste

Typical electrical wastes can include:

- Toasters
- Coffee makers
- Vacuum cleaners
- Hair dryers and curling irons
- Desk fans
- Paper shredders

Important: new models of these items may have a circuit board in them that would qualify them as e-waste



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## Electrical Waste

- True electrical items consist almost entirely of **metal, wires, and plastic**. This is your second basic criteria, besides assessing whether something has a circuit board or not, when telling apart electrical waste from e-waste
- Electrical waste does **not** have to be managed according to the 22 CCR, Ch 23 regulations as e-waste or universal waste, and can be disposed of in the common (sanitary) trash, i.e., onsite dumpsters



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## What is a Universal Waste Handler?

- Definition in 22 CCR 66273.9
- Means:
  - A generator of UW; OR
  - A facility that receives UW from handlers and sends it to handlers/destination facilities; OR
  - A facility that meets the regulatory authorization requirements for treating UW (22 CCR Ch 23, Art 7)



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## What is a Universal Waste Handler?

- Does not mean:
  - A facility that treats, recycles, or disposes of UW as hazardous waste; or
  - A UW transporter; or
  - The owner or operator of a destination facility.



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## Dismantlers

- A facility that manually disassembles e-waste without breaking it or shredding it is known as a dismantler
- There are less than 100 dismantlers in California



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## Dismantlers

Unlike collectors, dismantlers must:

- Maintain aisle space between Gaylords and pallets of e-waste, in accordance with Fire Department rules
- Have knowledge of basic hazardous waste generator requirements, since almost all dismantlers generate some hazardous waste residuals from dismantling e-waste



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## Universal Waste Treatment Facilities

"Treatment facility" is not defined in 22 CCR

- A "treatment facility," as DTSC understands and uses the term, generally refers to a universal waste facility operating an onsite e-waste shredder or CRT glass breaking unit



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## Treatment

There are fundamentally two types of allowable treatment activities: shredding, and CRT glass breaking

Treatment facility requirements include:

- Preparing and maintaining a closure plan, closure cost estimate (CCE), and financial mechanism with DTSC
- Closure notification requirement
- Most require a permit from the local air district
- More in-depth personnel training requirements

There are only about 12 e-waste treatment facilities left in California



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## Transporters are Not Handlers!

An e-waste transporter is a type of UW transporter

A "UW transporter" is defined in 22 CCR 66273.9 as:

- "A person engaged in the offsite transportation of UW by air, rail, highway, or water"
- UW transporters do not require registration with DTSC
- They have very few requirements compared to handlers (basically, to package and contain e-waste inside a truck so that it doesn't spill all over the highway in case of road accident)
- DTSC has inspected very few UW transporters



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## Handling UW: ID Numbers

- When is an ID Number required?
  - Before a UW Handler accumulates 5,000 kg of UW (22 CCR 66273.32 (a) and (b))
- 2 Types of ID Number
  - Federal → for UW that is also RCRA hazardous waste
  - State → For UW that is non-RCRA Hazardous Waste



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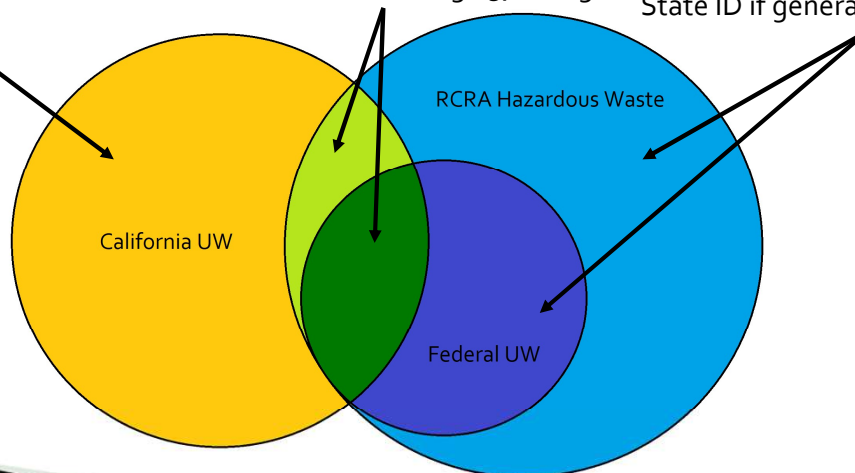
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## Handling UW: ID Numbers

State ID if accumulating  
 $\geq 5,000$  kg

Federal ID if accumulating  $\geq 5,000$  kg

Federal ID if generating  $>100$  kg/mo  
State ID if generating  $\leq 100$  kg/mo



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## Handling UW: Labelling

22 CCR 66273.34(d) requires universal waste collectors to label all boxes, pallets, or individual items of e-waste with the words "Universal Waste -- Electronic Devices," or hang a sign over an area where e-waste is being accumulated with these same words

- Compared to the labeling of hazardous wastes, e-waste labeling is a **simple requirement** -- the label doesn't have to include waste codes, the name and address of the facility, or the EPA ID#



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## Handling UW: Labelling

Some facilities **incompletely** or **incorrectly** label boxes, pallets, or large items of e-waste (e.g., 200-pound projection TVs)

- For example, they will label boxes as "E-Scrap" or "Remote Controls"
- It's acceptable for these words to be on the label or sign, but the label or sign **must also contain the prescribed words** "Universal Waste – Electronic Devices" to meet the regulatory requirement



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## Handling UW: Labelling

- It's acceptable for the facility to **handwrite** labeling information onto white paper and tape it to the box, pallet, or large item of e-waste. However, handwriting **directly** onto the box is discouraged since boxes will likely be reused
- 22 CCR 66273.34(d) gives the facility the option to use **overhead signage** for an area where they storing a lot of e-waste. This is practical if they have one corner or area of their warehouse where they accumulate e-waste that has already been sorted and is awaiting offsite shipment



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## Handling UW: Labelling

- Is this a correct label?



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## Handling UW: Labelling

- Is this a correct label?



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## Handling UW: Packaging

- Requirements in 22 CCR 66273.33-66273.33.6
- Containers should be:
  - Structurally sound
  - Lack evidence of leakage, spillage, or damage
  - Adequate to prevent breakage
  - Compatible (especially important for batteries)
  - Closed (lamps)



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## Handling UW: Packaging



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## Handling UW: Accumulation Time

A facility cannot accumulate e-waste for any longer than **one year** from the date the facility received it from offsite (22 CCR 66273.35)

There are two aspects to the 22 CCR 66273.35 requirement:

1. Labeling the e-waste with the date (either with a numeral date, or a barcode sticker that allows the facility to scan and track the date), and
2. Keeping track of all the labeled or barcoded e-waste to make sure none of it is onsite more than one year

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## Handling UW: Accumulation Time

- Accumulation start dates are often marked on the same piece of paper or sticker as the e-waste label
- The e-waste accumulation start date doesn't have to formally list the month, date, or year; for example, the facility can write "8/13/23" instead of "August 13, 2023"



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## Handling UW: Accumulation Time

There are a few different ways the facility can meet the accumulation time labeling requirement:

- By placing the e-waste in a container and labeling the container with the **earliest** date that **any** of the e-waste was received;
- By labeling **each** e-waste item with the date it was received;
- By maintaining an **inventory system** that identifies the date the e-waste was received; or
- By placing the e-waste in a **specific accumulation area** and labeling **the area** to identify the earliest date it was received



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## UW Handling/Treatment Notifications

- E-waste, CRTs, and CRT Glass
  - 22 CCR 66273.32(c); 22 CCR 66273.74(a)(1)
    - Notice of Intent (NOI) to handle, dismantle, and/or treat
      - Use UWED or DTSC Form 1388
      - Notify 30+ days before accepting/treating
  - Instructions on filing NOI: DTSC webpage "[E-Waste Notification of Intent Fact Sheet](#)"



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## UW CRT/CRT Glass Disposal Notification

- CRT disposal 22 CCR 66273.74(a)(2)
  - NOI to dispose of CRTs or CRT glass
    - Within 15 days of disposal determination
    - Must include:
      - Facility state/EPA ID number
      - Description of method that generated the CRTs/CRT glass



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## UW Handling/Treatment Notifications

- PV Modules
  - 22 CCR 66273.32(e); 22 CCR 66273.74(a)(4)
    - NOI to handle, dismantle, and/or treat
      - Can use linked notification forms on DTSC webpage "[Photovoltaic Modules \(PV modules\) – Universal Waste Management Regulations](#)"
    - Notify 30+ days before accepting/treating



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## UW PV Module Disposal Notification

- PV module disposal 22 CCR 66273.74(a)(5)
  - NOI to dispose of PV modules
    - Within 15 days of disposal determination
  - Must include:
    - State/EPA ID number
    - Description of method that generated PV modules
    - Disposal facility name, address, ID number
    - Notification form on DTSC webpage "[Photovoltaic Modules \(PV modules\) – Universal Waste Management Regulations](#)"



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## Handling UW: Staff Training

22 CCR 66273.36 requires the facility to ensure that personnel who manage e-waste at your site are thoroughly familiar with proper e-waste management and emergency response procedures ***relative to their responsibilities***

- This means that there is no one-size-fits-all training, or training plan, for all e-waste facilities



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## Handling UW: Staff Training

Although the facility can copy and paste large portions of relevant DTSC e-waste webpage content straight into their training plan, the facility must then customize their plan according to their facility and the specific duties and knowledge required of each employee to do their job

All e-waste facilities will differ somewhat by

- What types of e-waste they receive
- How they manage them
- How their warehouse and/or outdoor lot is arranged
- How they label, contain, and track their e-waste



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## Handling UW: Staff Training Essentials

1. The proper disposition of e-waste managed at the facility (e.g., the locations of e-waste containers, or the location of a centralized e-waste accumulation area)
2. The types and hazards associated with the e-waste that personnel may manage at the facility



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## Handling UW: Staff Training Essentials

3. The proper procedures for responding to releases of e-waste, including the position titles and how to contact those personnel at the facility who are designated to respond to reports of releases and respond to questions received from other personnel at the facility
4. The applicable requirements regarding labeling, collecting, handling, consolidating, and shipping universal wastes at the facility, including, but not limited to, the prohibition on the disposal of e-waste



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## Handling UW: Staff Training Resources

- If e-waste facility personnel have been to a 40-hour **HAZWOPER** (Hazardous Waste Operations) class, they cannot count this as e-waste training because HAZWOPER has insufficient detailed information on e-waste to qualify as comprehensive training material
- Staff training resources include all the fact sheets and information on the [DTSC public e-waste webpage](#)



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## UW Transporter Requirements

- NO notification requirement
- Hazardous waste manifest is not required
  - Shipping paper is required if the UW meets DOT definition of a hazardous material
- Transporter must ensure items are appropriately packaged
- Transporter can only hold universal waste at transfer facility for up to 6 days (10 days if zoned industrial)



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## Authorization to Treat Universal Waste

- Self-implementing authorization (22 CCR, Ch 23, Art 7)
- Must meet requirements for:
  - being a universal waste handler
  - Being a hazardous waste generator (as necessary)
- Conduct treatment in accordance with regs in 22 CCR, Ch 23, Art 7



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## How to be Authorized for UW Treatment

- Treatment facilities must have:
  - A more comprehensive employee training plan
  - A closure plan
  - A closure cost estimate and financial assurance mechanism



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## Allowable Methods for Treating UW

- Disassembly/draining
  - 22 CCR 66273.72
  - Removal of non-user-replaceable parts
- Shredding (and other similar activities)
  - 22 CCR 66273.73(d)
  - Applicable to electronic devices, printed circuit boards, CRTs, PV modules
  - Can't apply heat or chemicals (including water)



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## Management of UW Treatment Residuals

Each residual will fall into one of four categories:

1. Hazardous waste
2. Universal waste
3. Non-hazardous waste, or
4. Scrap metal



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# Management of UW Treatment Residuals

- In general, the first two categories have ***negative value*** (they cost money for the dismantler to send offsite)
- The second two categories have ***positive*** or ***commodities value*** to domestic and international reclamation markets



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## Residual Category 1: Hazardous Wastes Generated by E-Waste Dismantlers

1. Intact CRTs (RCRA hazardous waste)
2. Plasma TV inner panels (RCRA hazardous waste)



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## Residual Category 2: UW

As you know, e-waste is a *type* of UW

E-waste also *contains* UW in the form of residuals:

1. UW batteries
2. UW lamps
3. UW Mercury Containing Equipment (MCE)



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## Residual Category 3: Scrap Metal

- Scrap metal is exempt from regulation as hazardous waste as long as it will be recycled (22 CCR 66261.6)
- There is generally a good market for scrap metal recycling
- There are two main *types* of scrap metal generated during e-waste dismantling:
  1. The metal frames of most electronic devices, and
  2. Printed circuit boards



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## Residual Category 4: Non-HW

- Non-hazardous waste usually includes the plastic frames of devices
- There is usually a steady, lucrative market for this plastic, both domestically and internationally
- Plastic frames can go into the common (sanitary) trash if necessary, but it rarely does because of its recycling value
- They do not have to label or track this material once it's generated from e-waste disassembly



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## Exporting UW out of California

- Some California universal wastes are not universal waste in other states
  - E.g. PV modules
- Once a California UW leaves California, it is subject to all other applicable requirements (federal and other state)



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## Exporting UW out of the US from CA

- 22 CCR 66273.40(a)(1)  
 “A universal waste handler who sends universal waste to a foreign destination is subject to the requirements of 40 Code of Federal Regulations part 262, subpart H and article 8 of chapter 12 of this division” [emphasis added]
- Referenced sections are “Transboundary Movements of Hazardous Waste for Recovery or Disposal” in Federal and State regulation



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## Exporting UW out of the US from CA

60 calendar days or more before export:

- **In general:** Notify DTSC of intent to export CA UW using DTSC Form 1478 (22 CCR 66273.40(a)(2))

Specific to electronic devices, CRTs and CRT glass:

- **If exporting CEDs:** notify DTSC of intent to export CA CEDs (PRC 42476.5)
- **If exporting CRT device/CRT/unsorted CRT glass:** notify US EPA through the RCRAinfo Waste Import Export Tracking System (WIETS) (40CFR 261.39(a)5, 40CFR 261.41)



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# Exporting UW out of the United States

General notification requirements for export of e-waste/CRTs/CRT glass	Additional notification requirements for export of CRTs/CRT glass
<ul style="list-style-type: none"> <li>• DTSC Notification-60 days before shipment</li> <li>• Additional notification information for CEDs</li> <li>• Submit annual report to UWED (if applicable) by February 1</li> <li>• Submit electronic export information (EEI) to Automated Export System (AES) by March 1</li> </ul>	<ul style="list-style-type: none"> <li>• RCRAinfo WIETS notification-60 days before shipment</li> <li>• Send copy of Acknowledgement of Consent (AOC) to DTSC-within 30 days of receiving</li> <li>• Submit annual report to RCRAinfo WIETS by March 1</li> </ul>



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# CalRecycle's CEW Program

- CalRecycle (also known as the Department of Resources Recycling and Recovery) introduced the CEW Program in California in 2003
- Since then, millions of pounds of e-waste have been diverted from landfills because of the financial incentive the Program offers to recycle items that may have limited recovery value (such as CRTs), or are labor-intensive to dismantle (such as laptops)



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## CalRecycle's CEW Program

- Most e-waste collectors and recyclers join the CEW Program to collect money from CalRecycle, and to tell their customers that they are "approved" by the CalRecycle as official CEW collectors and recyclers
- This approval does not necessarily correlate with compliance, and many collectors and recyclers have had their CalRecycle approval temporarily suspended because they were cited Class I violations by DTSC
- As of January 2024, there are **19** CEW Recyclers and **294** CEW Collectors in California



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## CalRecycle's CEW Program

- DTSC has no role in reviewing the CalRecycle CEW Program Application (also known as the Form 186) or other payment claim-related documents
- All e-waste handlers in California must abide by the 22 CCR Ch 23 regulations regardless of whether they participate in the CalRecycle CEW Program



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# CalRecycle's CEW Program

For questions about the CalRecycle CEW Program, please visit the CEW Program webpage located at <https://www.calrecycle.ca.gov/Electronics/CEW/> or contact them by email at [ewaste@calrecycle.ca.gov](mailto:ewaste@calrecycle.ca.gov)



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Scan QR Code for additional DTSC Contact Information:



# Any Questions?

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