

# **CRTs and CRT Glass: History and Background**

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# It started in 2000...

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- December 20, 2000: Materials for the Future Foundation letter: Are CRT devices hazardous waste? How do the California's hazardous waste rules apply?
- March 2001: DTSC response:
  - “The disposal of waste CRTs in municipal landfills has always been prohibited in California ”

# DTSC's First E-Waste Regulations

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- August 2001: Emergency regulations designate as Universal Waste:
  - “CRT materials”
  - “Consumer electronic devices”

# Outcomes of the MFF Letter and UW Regulations...

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- Landfills stopped allowing disposal of electronic waste
- A few e-waste recyclers on the scene
- Solid waste facilities began charging to accept e-waste
- Increased roadside disposal

# The Legislature acts...

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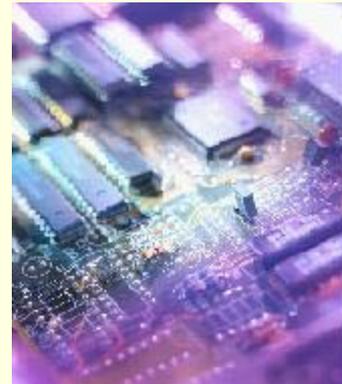
- 2003: SB 20
- 2004: SB 50
- The Electronic Waste Recycling Act



# The Electronic Waste Recycling Act

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- Three agencies
  - Board of Equalization
  - DTSC
  - Integrated Waste Management Board
- Fee on “covered electronic devices”
- Payments to “approved recyclers”
- Restrictions on hazardous metals



# DTSC's Role

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- Determine what devices are presumed hazardous waste when discarded
- Verify “conformance” of e-waste handlers (collectors and recyclers) with UW requirements
  - A condition for approval by CalRecycle
  - For collectors, generally check for submittal of required reports and notifications
  - For recyclers, we verify through a site inspection

# DTSC's Role (2)

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- Adopt and interpret the regulations
- Receive and manage data
- Coordinate with BOE and CalRecycle
- Education and outreach
- Investigate fraud in the Payment Program

# A Few Words About Universal Waste

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- Universal waste is **hazardous waste** that is exempted from full regulation
- Handling and transportation are subject to reduced requirements of chapter 23 of title 22
- Generators can opt to manage universal waste as hazardous waste

# Activities that would otherwise require a hazardous waste permit

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- Accepting and accumulating electronic devices generated by somebody else
- Reclaiming materials from CRTs, e.g.:
  - Separating panel from funnel glass
  - Breaking CRT glass
  - Cleaning CRT glass to remove phosphor powder

# CRT Glass Issue

Limited Treatment and  
Disposal Options

## §66273.75. Treatment (Processing) Standards

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A universal waste handler who treats electronic devices, residual printed circuit boards, and/or **CRTs** pursuant to section 66273.73 shall ...

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(8) Treat CRTs **only** for the purpose of recycling one or more types of CRT glass and **ensure** that all the CRT glass is reclaimed at a **CRT glass manufacturer or at a primary or secondary lead smelter.**

# A Variance from 66273.75(a)(8) would be required to...

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- Dispose of CRT glass in a hazardous waste landfill
- Dispose of non-RCRA CRT glass (e.g., clean panel glass) in a solid waste landfill pursuant to Health and Safety Code section 25141.5

# A Variance from 66273.75(a)(8) would be required to...

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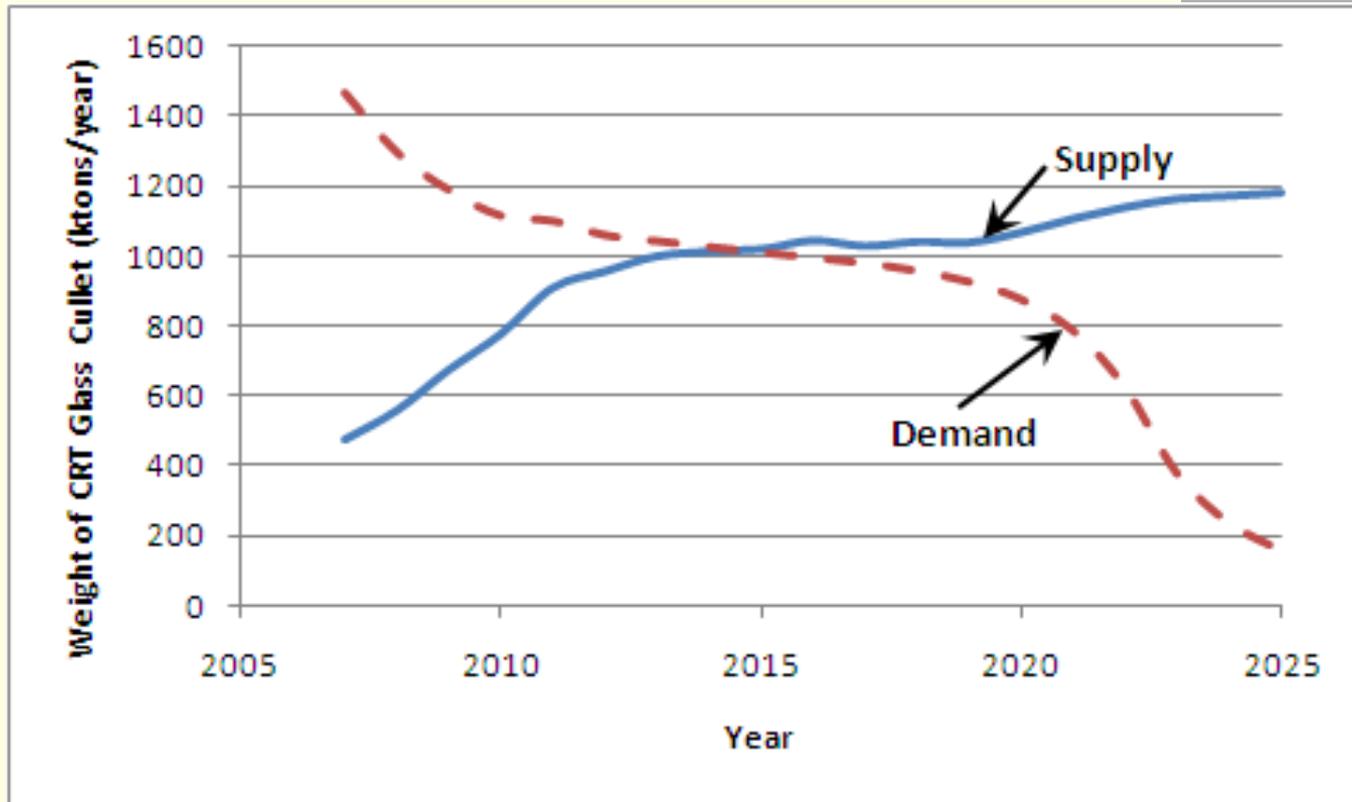
- Recycle CRT glass under the recycling exclusions in Health and Safety Code section 25143.2
- Recycle (non-RCRA) CRT glass “in a manner that constitutes disposal” pursuant to 66266.21 of title 22

# The CRT Glass Market

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- Markets for glass-to-glass are shrinking
- Market for lead smelting limited
- Glass is starting to pile up

# The CRT Glass Market



Gregory, J.; Nadeau, M.; Kirchain, R. Evaluating the Economic Viability of a Material Recovery System: The Case of Cathode Ray Tube Glass. *Environ. Sci. Technol.* 2009 43, 9245–9251.

# CRT Glass Issue

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- DTSC and CalRecycle are both evaluating options
- Challenge: protect public health and the environment and, ideally, recover resources
- Regulatory changes will be needed to implement



# Thank you...

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