

California's Covered Electronic Waste Recycling System – A Closer Look

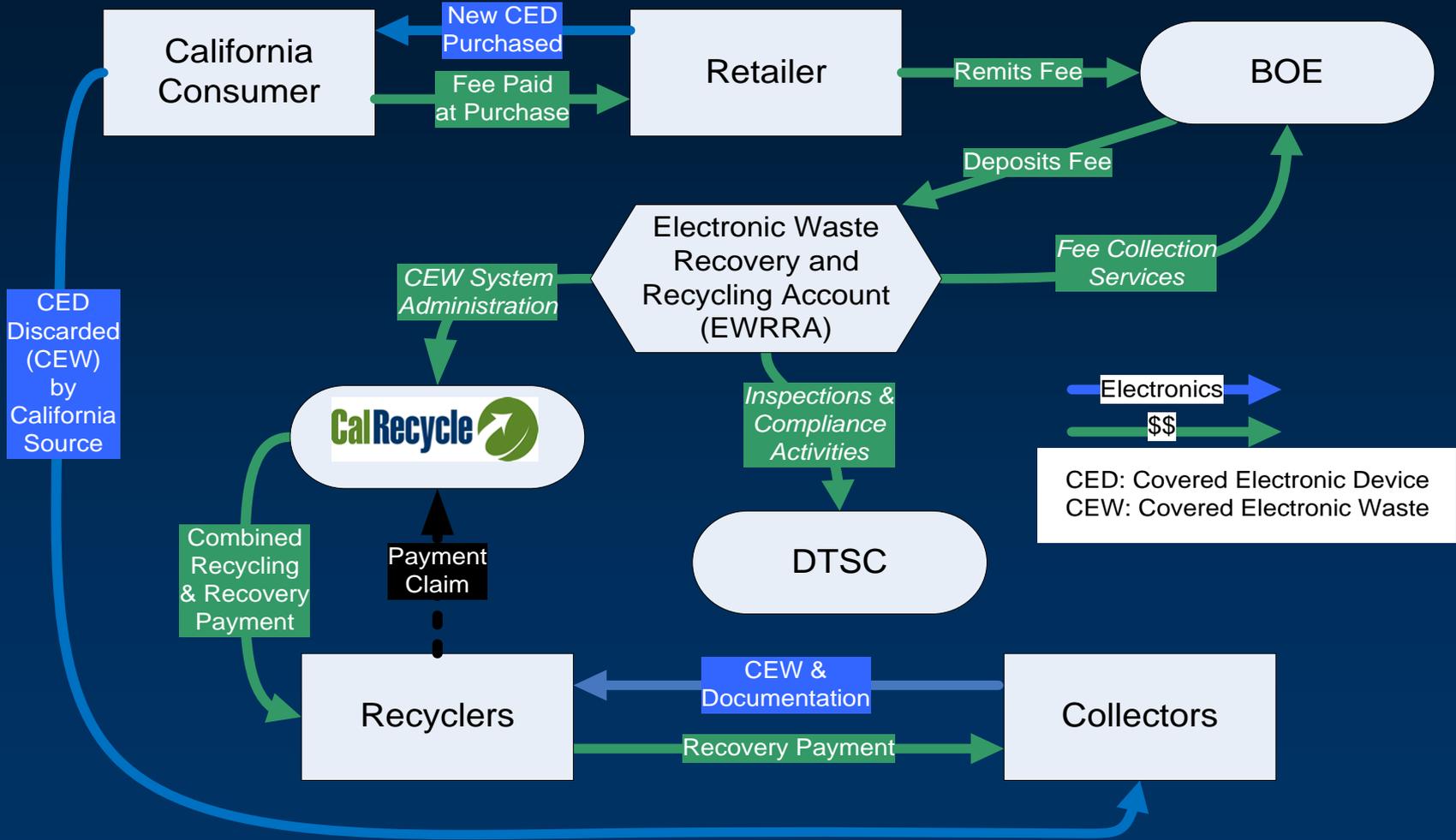


GEM Network Meeting - Sacramento

This Afternoon's Topics:

- **The Covered Electronic Waste (CEW) Program**
 - **Fees & Revenue**
 - **Costs & Payments**
 - **Participants**
 - **The Recycling Claim Process**
- **Program Challenges**
 - **What to do with 100 million pounds of CRT annually?**
 - **Will current model work for other technologies?**

Covered Electronic Waste (CEW) Recycling System



Electronic Waste Recycling Fee

Not an “ARF”

- No “trust fund” for future
- Today’s revenue pays for yesterday’s waste



Retailers collect fee from consumer

- Assessed on retail sales of new CEDs
- Retailers retain 3% for administrative costs
- Retailers remit funds to BOE
- Approximately 10,700 registered retailers (21,600 locations)

Electronic Waste Recycling Fee

Consumer fee levels initially established in statute via Act:

- Six dollars (\$6) for each covered electronic device with a screen size of less than 15 inches.
- Eight dollars (\$8) for each covered electronic device with a screen size greater than or equal to 15 inches but less than 35 inches.
- Ten dollars (\$10) for each covered electronic device with a screen size greater than or equal to 35 inches.

Electronic Waste Recycling Fee

CalRecycle can adjust fee annually as necessary to maintain program solvency and prudent reserve

Due to solvency concerns, CIWMB acted in **June 2008** to increase fee levels (effective January 2009):

- **\$8, \$16 and \$25**

Due to excess reserves, CalRecycle acted in **July 2010** to reduce fees to original levels (effective January 2011)

- **\$6, \$8 and \$10**

Due to continuing surplus reserves, CalRecycle acted in **July 2012** to further reduce fees (effective January 2013):

- **\$3, \$4 and \$5**



Net Costs and Payment Rates

CalRecycle must establish a recovery and recycling “payment schedule” on or before July 1 biennially

- Rates should cover the “average net cost” for a collector to collect, consolidate, and transport, and for a recycler to receive, process, and recycle, covered electronic wastes

Net Cost Reports inform CalRecycle

- Report content guided by regulation

Current payment rates: \$0.23 / pound recycling; \$0.16 / pound recovery

Net Costs and Payment Rates

Comparison of Reported Costs in Cents per Pound

	2005	2006	2007	2008	2009	2010	2011
Recovery	17.1	16.7	14.8	16.6	14.4	15.3	15.2
Recycling	25.2	21.5	21.0	22.8	18.7	18.1	19.2
Total	42.3	38.2	35.8	39.4	33.1	33.4	34.4

Calculated weighted averages of operational costs reported Mar 1 of following year.

Net Costs and Payment Rates

Reconciling “average net costs” with intent of Act may create policy questions

–Are payment rates based on averages efficient? Fair?

- By definition: some paid too little, some too much
- Participants may charge fees if costs are not covered

–Weighted averages reflect entire industry’s cost

- Wide ranging business models
- Must be considered in context of scales and efficiencies

–Data reflects historical costs

- Future markets / costs unknown

CEW Recycling System Participation

Participation is voluntary

- System relies on enterprise and initiative
- Incentive? Responsibility and/or money

Who can be a participant?

- Solid waste companies
- Recycling companies
- Asset management companies
- Local governments
- Non-Profits
- Individuals

CEW Recycling System Participation

Historically:

- > 1,400 total entities have participated
- < 90 local gov't have participated directly

Presently:

- ~ 550 approved collectors active
 - ~ 45 of which are local gov't
- ~ 50 approved recyclers active

CEW Recycling System Participation

CalRecycle “approves” collectors and recyclers for two year terms.

- Application process
 - Periodic assessment of basic compliance
 - Not a permit or certification!
-
- Collectors
 - Notification and annual reporting
 - Recyclers
 - Annual DTSC inspections

State is Market Participant

Statutory declaration allows government to set program requirements and limitations

- Protect public funds
- Maximize in-state processing
- Participants must meet California standards
 - Jobs, environmental protection, etc
- Still must interface with global market
 - Post-processing residuals typically leave California

Payment Claim Process

Review of Claim - Is it complete? Does it add up?

- Provided record of CEW recovery
 - CA source documentation
 - Collection Logs
 - Proof of Designation
 - Transfer documents
- Record of material recycling (cancelled)
- Demonstrate residuals (CRTs) shipped as required



Payment Claim Process

Is it Truthful????

– Validation process

- Use of Lexis/Nexis -- Accurint
- Phone calls: *“Did you discard...?”*
- Work closely with DTSC / DOJ / CDFA



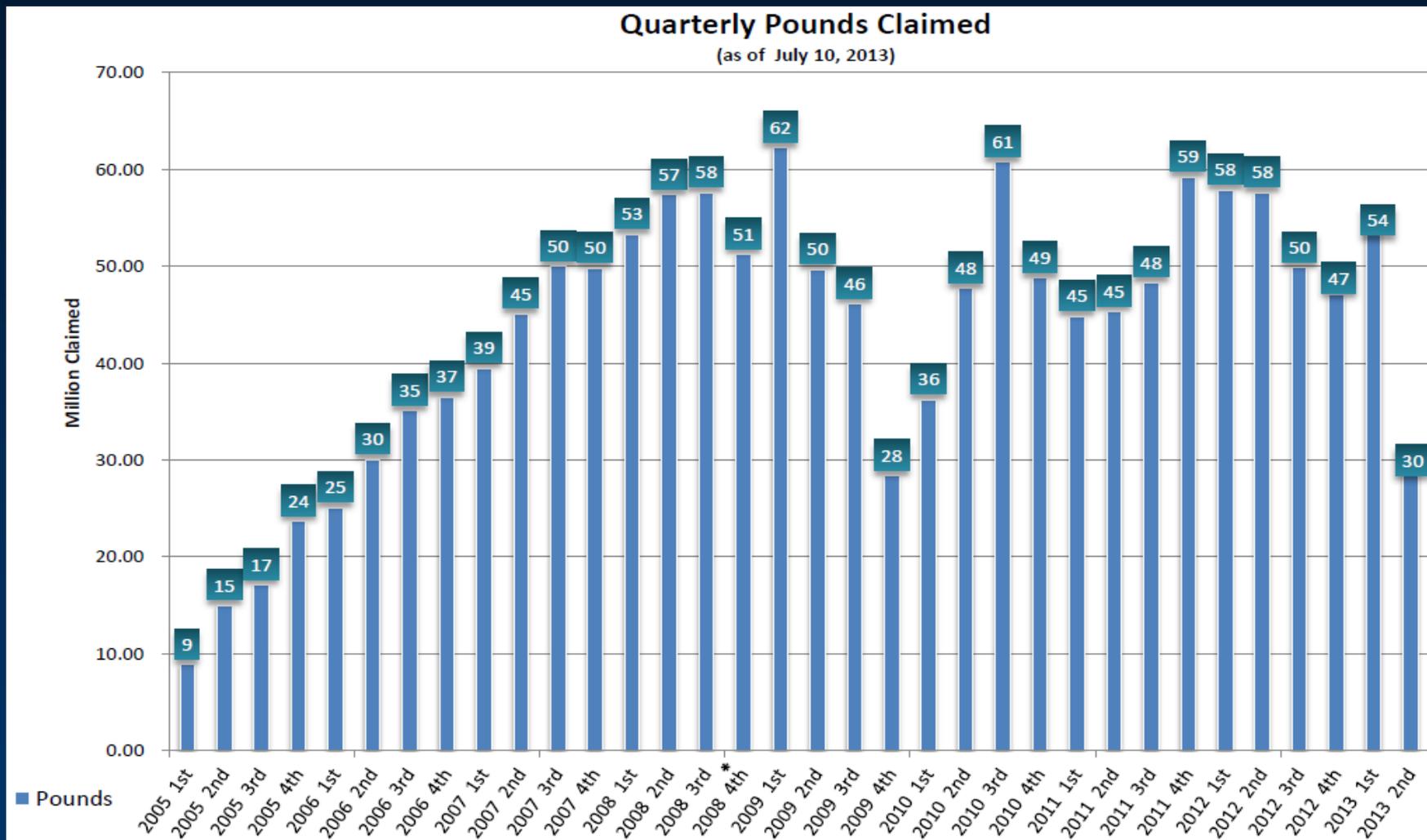
Finishing the Claim

- Courtesy opportunity to resolve deficiencies
- Claim review finalized: Approved, Adjusted, or Denied
- Accounting send to State Controllers Office for payment

– Appeals: Administrative relief

CEW Recycling Payment System Claim Volumes

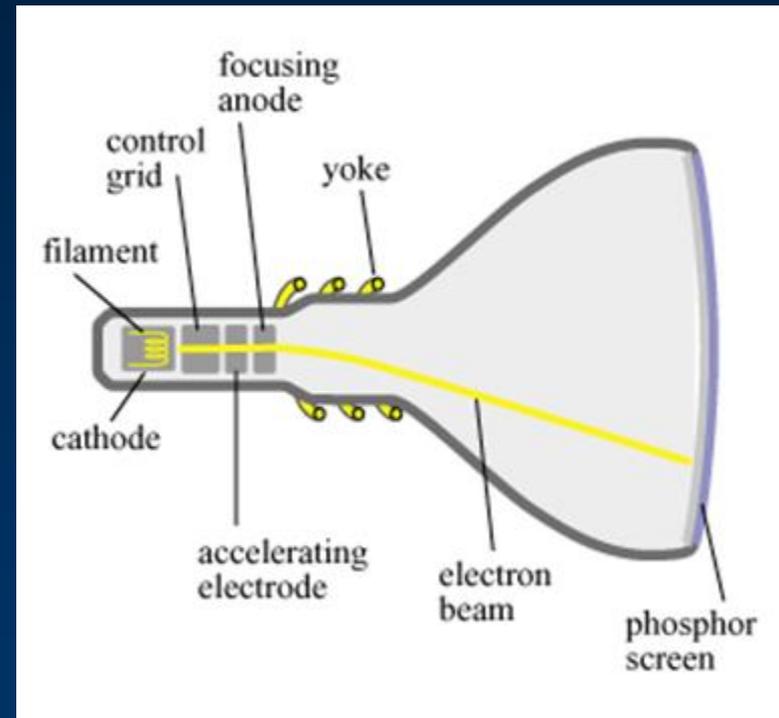
- ~1.4 billion pounds of CEW claimed since program inception (as of July 2013)



Volume fluctuations due to infrastructure changes, legacy stockpile depletion, CRT glass market disruptions and claim timing. Recyclers are supposed to submit claims within 45 days after the end of a reporting month.

Cathode Ray Tubes (CRTs)

Composition and Components



In general:

- Funnel contains lead
- Panel contains barium

CEW-CRT: Program Facts / Stats

98% of CEW claims are for CRT devices

- 3x increase in non-CRT in last two years

>300 million pounds of CRTs / glass “shipped” since January 2010:

- >60 million pounds to Mexico
- >80 million pounds to Arizona
- >30 million pounds to Ohio
- >120 million pounds initially to “in-state” intermediate destinations

CEW-CRT: Program Facts / Stats

Only one known CRT manufacturer available to Western glass generators

- Samtel / Videocon (India)

Only three large-scale smelters in North America consuming CRT glass

- Doe Run (Missouri)
- Teck Cominco (Canada)
- Xstrata (Canada)

New domestic lead extraction ventures reportedly in development; capacity uncertain

Program Challenges Today

- Viable uses for non-leaded CRT glass?
- Long-term supply of CRT glass is limited; impacts ROI
 - In-state processing capacities exist, but not final markets
 - New disposition options for residual glass are needed



Will CEW recycling rules change to allow any CRT glass disposal?

Future Program Challenges

Non-CRT CEW

- Plasma panel management advisory
- Markets for LCD residuals?
- Rare earth extraction?
- CCFL handling and treatment concerns?
- LED characteristics?



Future Program Challenges

Can existing program model accommodate multiple technologies and market conditions?

Does artificial value (subsidy) create too much risk for a single state approach?

- Can fraud be effectively controlled?

And what about non-covered waste?

In Summary...

California's CEW recycling program has been very successful... thus far

- Fostered robust collection infrastructure
- Provided public with opportunities

Program will need to adjust

- New laws and regulations to keep up with changing technologies and markets

Stakeholders will continue to shape policy future

- Materials covered and program model

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