

U.S. EPA Meeting on Cathode Ray Tubes & End-of-Life Electronics 2014 E-Scrap Conference * October 23, 2014 Summary Notes

Introduction to CRT Session

On October 23, 2014, in conjunction with the national E-Scrap Conference in Orlando, Florida, the U.S. Environmental Protection Agency held a 90-minute meeting on issues regarding recycling of cathode ray tubes (CRTs).

The meeting included about 100 attendees representing state governments, non-governmental organizations, original equipment manufacturers, electronics recyclers, CRT glass processors, and trade associations.

The goals of this meeting were to (1) report out on a meeting hosted by EPA on September 23, 2014, in Arlington, Virginia; (2) discuss and solicit feedback on potential actions to be taken by the electronics recycling community, which were identified during the September meeting; and (3) obtain information for how to focus actions by the electronics recycling community through voting by meeting attendees.

Report Out on September 23 EPA CRT Meeting

On September 23, 2014, EPA hosted a half-day meeting on CRTs as part of the Sustainable Materials Management Electronics Reuse and Recycling Forum. The meeting included about 45 attendees representing multiple stakeholder groups including state governments, non-governmental organizations, original equipment manufacturers, electronic recyclers, CRT glass processors, trade associations, and recycling certification programs (R2 and e-Stewards).

The goals of the September meeting were to (1) clarify the problem regarding current issues with recycling CRT glass; (2) identify factors that are influencing the problem; and (3) identify the existing and emerging end uses for CRT glass and to evaluate the advantages and challenges of each.

The outcomes from the September meeting are documented in the "*Current Understanding of the CRT Landscape*," which was provided to attendees of the October meeting in hard copy.

Potential Actions for CRTs

After providing an overview of the September 23 meeting and the *CRT Landscape* handout, EPA then reviewed and sought comment on a list of potential actions to be taken by the electronics recycling community, which were originally generated during the September meeting, to help address the current problems with recycling CRT glass.

The potential actions to be taken by the electronics recycling community, which incorporate comments discussed during the October 23 meeting, include:

- A. Work with R2 and e-Stewards to ensure compliance with the CRT rule, including compliance with the speculative accumulation provision, as a means of maintaining certification.
- B. Improve alignment of financial incentives to facilitate actual recycling, rather than merely collection, of CRTs.
 - a. Collectors can also be recyclers and we should be mindful of incentives that may discourage collection.
- C. Consistently and effectively enforce the CRT rule and other regulations and ensure accountability for mismanaged CRTs.
 - a. Prioritize enforcement.
 - b. Identify who is accountable.
 - c. Clarify who would be considered the generator of mismanaged CRTs.
- D. Provide guidance for those engaging in contracts with electronics recyclers to ensure proper downstream processing of CRT glass.
 - a. Include electronics recyclers in this guidance.
 - b. Guidance should include the risks, repercussions, and environmental effects of non-compliance.
 - c. Provide guidance for appropriate levels of financial assurance and closure plans.
- E. Identify available CRT recycling/recovery options, capacity, and associated cost.
 - a. Provide guidance on advantages/challenges with each option.
 - b. Identify responsible upstream and intermediate recyclers as well.
 - c. Include CRT tube processors as well as glass processors.
- F. Improve awareness of regulations (e.g., training) by EPA, states, and the electronics community.
- G. Improve tracking of CRTs to ensure proper recycling (or disposal) of CRT glass and reduce use of fraudulent paperwork to claim manufacturer credits.
 - a. Clarify the problem of double counting and “air pounds.”
 - b. Improve reporting in regulations at collection point.
- H. Grant variances, with conditions (e.g., performance management standards, financial assurance, consider requiring receipt payments or gate fees be set aside for capital investment), for longer-term accumulation of CRT glass by CRT glass processors.

- a. Concern that industry-wide variances don't address the problem and variances should be granted on case-by-case basis.
 - b. EPA should provide conditions on variances.
- I. Conduct/invest in research, development, and lifecycle analyses of technologies to recycle CRT glass.
 - J. Need to coordinate systems-wide approach to the issue.
 - a. Develop regular, national dialogue on CRT issues (EPA, states, other stakeholders).
 - K. Improve consistency in interpretation and application of state law.
 - L. Provide incentives for properly managing CRTs and for recycling CRT glass.

Voting on Potential Actions for CRTs

After reviewing the above potential actions to be taken by the electronics recycling community, EPA then asked the meeting attendees to vote for which areas they thought would make the most impact in addressing the issue. Each attendee was given five votes to distribute however they wanted across the 12 potential actions.

The results of the voting are as follows:

	Potential Actions to be Taken by the Electronics Recycling Community	Votes
C.	Consistently and effectively enforce the CRT rule and other regulations and ensure accountability for mismanaged CRTs.	77
E.	Identify available CRT recycling/recovery options, capacity, and associated cost.	53
G.	Improve tracking of CRTs to ensure proper recycling (or disposal) of CRT glass and reduce use of fraudulent paperwork to claim manufacturer credits.	41
A.	Work with R2 and e-Stewards to ensure compliance with the CRT rule, including compliance with the speculative accumulation provision, as a means of maintaining certification.	29
D.	Provide guidance for those engaging in contracts with electronics recyclers to ensure proper downstream processing of CRT glass.	28
B.	Improve alignment of financial incentives to facilitate actual recycling, rather than merely collection, of CRTs.	26

F.	Improve awareness of regulations (e.g., training) by EPA, states, and the electronics community.	24
I.	Conduct/invest in research, development, and lifecycle analyses of technologies to recycle CRT glass.	20
K.	Improve consistency in interpretation and application of state law.	17
J.	Need to coordinate systems-wide approach to the issue.	16
H.	Grant variances, with performance management conditions (e.g., performance management standards, financial assurance, payments to receive set aside for capital investment), for longer-term accumulation of CRT glass by CRT glass processors.	15
M.	Provide incentives for properly managing CRTs and for recycling CRT glass.	10

Next Steps for CRTs

EPA then asked the meeting participants to provide their contact information to EPA if they were interested in helping with a potential action to be taken by the electronics recycling community. EPA said they hoped to begin working with the electronics recycling community on a strategy that would coordinate multiple actions by the community and help address the current problems with recycling CRTs.

Introduction to End-of-Life Electronics Session

On October 23, 2014, the U.S. Environmental Protection Agency (EPA) held an open, collaborative session within the E-Scrap conference in Orlando, Florida to hear stakeholder feedback. The session was open to all participants from the electronics community in attendance at the E-Scrap conference. The purpose of the session was to build on the outputs from the Sustainable Materials Management (SMM) Electronics Reuse and Recycling Forum held in September 2014 and gather additional input from the community to identify opportunities for community action that will advance domestic end-of-life electronics management.

During this session, participants reviewed a list of Community Action Areas that was developed during the September SMM Electronics Reuse and Recycling Forum and were given an opportunity to provide additional input. The updated Community Action Areas are listed below. These action areas provide a platform for ongoing collaboration to more effectively shape the responsible management of end-of-life electronics.

Community Action Areas for End-of-Life Electronics

- A. Prevent improper management of hazardous materials and encourage best management practices.
 - a. Address risks for disassembly.
- B. Improve design for repair, reuse and recycling.
 - a. Create a value chain community discussion (manufacturers, retailers, people managing end-of-life); EPA could facilitate this through its convener role and other initiatives (e.g., EnergyStar).
 - b. Create quantifiable measures/metrics to inform design.
 - c. Track the cradle-to-grave of these products, to get manufacturers more on board.
 - d. Incentivize design for the environment through Extended Producer Responsibility (EPR) programs (e.g., something like EPEAT).
 - e. Make sure the glass (e.g., liquid crystal display or other types) produced is recyclable and able to be resold.
- C. Identify best practices for verifying and selecting recyclers and refurbishers that adhere to responsible end-of-life electronics management processes.
- D. Research is needed to obtain a quantifiable understanding of issues surrounding electronics recycling.
- E. EPA could use its convener role to engage stakeholders on various electronics issues.
 - a. Explore way to harmonize/provide consistency of state take-back laws.
 - b. Engage retailers on electronics collection and recycling.
- F. Determine EPA's role and involvement in new laws and policies.
 - a. E.g., the "kill switch" law and second-hand dealer laws.
- G. Increase the effectiveness of the electronics recycling system for recovering valuable materials.
- H. Perform a comprehensive inventory of laws and regulations relating to electronics reuse and recycling to create tools and training to aid in compliance and enforcement.
- I. Perform an inventory of best practices for innovative business models that encourage sustainable reuse and recycling.
- J. Develop a web portal related to used electronics management.
 - a. This would be a central place for documentation for repair, developed with Original Equipment Manufacturers (OEMs) in mind.
 - b. This should include a feedback loop for users.
- K. Awards
 - a. Establish recognition/benefit for those companies who are doing reuse/refurbishment.
 - b. Create an awards program or EPA recognition for people who are outstanding in areas such as best practices and design for reuse and recycling. One program identified was EnergyStar.

- c. Create a Challenge for municipalities to develop awareness and award performers.
- L. Raise awareness and education to help consumers better understand the value of recycling and reuse.
 - a. Get a better understanding of consumer demand for green products, including what consumers consider a “green product.”
 - b. Raise local public environmental health awareness—marketing, more like EnergyStar.
 - c. Improve labeling (e.g., having a “material content” label) on products.
 - i. UPC/QR code to identify materials and instructions for repair/disassembly, etc.
 - ii. Integrate this with existing labeling procedures.
 - iii. Note: Labels and warnings have limited effect in educating consumers.
 - d. Enable and encourage universities/schools to include design for reuse materials in curriculum.
 - e. Manufacturers and retailers should share the burden of educating consumers.
 - f. Tap into existing activities, such as GSA’s one-page fact sheet on how to responsibly dispose of a product.
 - g. Produce creative public service messages.
 - h. Create a sustainability calculator to help identify the impact on the environment when a certain item is recycled.
- M. State extended producer responsibility laws
 - a. Need a better understanding from different stakeholder perspectives of the results and impacts of these laws. (What have we learned? How are these working? What is the path forward?)

Next Steps for End-of-Life Electronics

All information gleaned from the forum and the E-Scrap session will be used to inform the next steps for collaboration with the electronics community to pursue specific actions for achieving sustainable electronics management.

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