

Recycling Markets Center

Philadelphia Solid Waste Advisory Committee

February 26, 2014



Pennsylvania
Recycling Markets Center

RMC – Overview

- Formation & Structure
- Programming
- Business Assistance
- E-Scrap & CDRA
- Expertise



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Recycling Markets Center

RMC – Formation & Structure

■ Formation & Structure

- ❖ Acts 101 (1988), Act 175 (2002)
- ❖ Act 175 Recycling Program Plan
 - 5 Market Development Initiatives and Action Items
 - Includes creation and support of independent center
 - Steering Committee led to RFP and Board Formation
- ❖ DEP RFP (October 18, 2004)
 - Operations Began July 2005



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RMC – Formation & Structure

- Formation & Structure

- ❖ Mission

- *To expand and develop more secure and robust markets for recovered (recycled) materials by helping to overcome market barriers and inefficiencies.*



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RMC – Formation & Structure

■ Formation & Structure

❖ Operations July 2005

- Independent 501c(3) Pennsylvania non-profit corporation
- By-Laws, 11 voting, 5 ex-officio board (26 states)
- Board Chair, President, Secretary, Treasurer
- Tethered relation with Penn State, Penn State Harrisburg
- DEP Anchor Partner



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RMC – Formation & Structure

- Formation & Structure

- ❖ Core Service Groups

- Recycling Markets Technical Assistance
- Recycling Markets Business Assistance
- Industry Outreach & Programming
- Enterprise Portal to Recycling Markets Information
- Applied Commercialization Research



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RMC – Programming

■ Programming

❖ RMC Markets Development Summits

- (5) E-Scrap Summits, last 4 years
- Almost 500 attendees

❖ Webinars

- (5) Webinars, last 3 years, Over 750 attendees
- (2) CDRA Webinars
- E-Scrap Legislation Across the United States
- Environmental Management Systems of E-Scrap Recyclers
- E-Scrap CDRA for the Consumer



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RMC – Programming

- Programming

- ❖ E-Scrap Processing & Facilities Tour

- Offered for Keystone SWANA Continuing Education
- ECOvanta, E-Force, Kuusakoski Philadelphia
- 30 attendees

- ❖ E-Scrap Conference

- Moderated or Presented 6 Sessions
- 880 attendees



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RMC – Programming

- Programming

- ❖ EPA SMM Summit

- 45 attendees, September 23/24, 2014

- ❖ PROP E-Scrap Certification Training

- (3) Sessions, Subject Matter Expert



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RMC – Programming

■ Programming

- ❖ PA Recycling Industries Congress
 - (2) Congresses, October 2011/January 2013
 - (1) Congress City Hall, April 2012
 - E-Scrap Exhibitors
 - (2) E-Scrap Educational Sessions/50 attendees



- ❖ Recycling Works! Exhibit
 - Launched America Recycles Day 2014
 - State Museum of Pennsylvania
 - Approximately 15,000 visitors



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RMC – Programming

■ Programming

❖ CDRA Stakeholder Meetings

- Initiated February 2015
- Ongoing workgroup to meet and inform DEP

❖ ERAP

- Electronics Recycling Association of Pennsylvania

❖ Mission

- *To promote the needs of the Pennsylvania electronics recycling industry while openly fostering common relationships that lead to effective and responsible end-of-life electronics management for all Pennsylvanians.*



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RMC – Business Assistance

- Business Assistance
 - ❖ WMGR081 General Permit Session
 - 95% attendance of those Permitted
 - Comment Letter to DEP
 - ❖ Permit Facilitation
 - Over 20 different companies



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RMC – E-Scrap & CDRA

- E-Scrap/CDRA Players
 - ❖ OEM
 - ❖ Collector
 - ❖ Group Plan Manager
 - ❖ Recycler
 - 34 Permitted in Pennsylvania
 - ❖ Downstream Processor
 - ❖ Refurbishers



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RMC – E-Scrap & CDRA

- E-Scrap/CDRA Players

- ❖ Certification Body

- R2, e-Stewards, ISO14001, RIOS

- ❖ Regulatory

- DEP Central Office
- DEP Regional Office
- EPA

- ❖ End Users

- ❖ Consumer



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RMC – E-Scrap & CDRA

■ E-Scrap/CDRA Players

❖ Reverse Supply Chain



Information Courtesy of US EPA, SMM, February 2015



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RMC – E-Scrap & CDRA

34 WMGR081 E-Scrap Recycling Facilities

eLoop LLC-Pittsburgh ■	Evolution E-Cycling LLC ○	Goodwill of SW PA	Hi-Tech Recyclers, LLC
Computer Recycler of Eastern PA, LLC	Responsible Recycling Services, LLC	Alpha Metals, Inc	Towanda Iron & Metal Inc.
E-Waste Experts, Inc. ○	Abington Relden Metals, LLC ■○	Keystone Technology Management, LLC ○	eLoop LLC-State College
ECS&R/ReCom Services, Inc ○	PC Surplus Recycling	Skills of Central PA, Inc	Egreen Electronic Recycling
Free Geek Penn	AERC ○	GER Solutions (Free-Cycle) ○	Keystone State Auctioneers
ECOVanta, LLC ■○	Eforce Compliance ■	Elemental Inc. ○	Kuusakoski ■ Philadelphia, LLC
Materials Processing Corp. ○	TBS Industries, Inc ○	Universal Waste Solutions, LLC ○	Vintage Tech, LLC ○
JVS Environmental, LLP ○	UNICOR ○	Barry G. House Liquidations	Commonwealth Computer Recycling ○
Paz Metals, Inc	iGreen Electronics		



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RMC – E-Scrap & CDRA

■ E-Scrap/CDRA Players

❖ Certification Body & Process

- R2, e-Stewards, ISO14001, RIOS, two part decision
 1. Choose e-Stewards or R2 Standard
 2. Choose appropriate EMS
 3. Implement EMS and R2 or e-Stewards Standard
 4. Contract a Certification Body (CB) for Stage 1 & Stage 2 Audits
 5. Pass Certification, plan for required Year 1 - 3 Surveillance Audits
 6. Conduct required, separate, yearly internal audits
 7. Re-certify to R2 or e-Stewards after 3 years



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RMC – E-Scrap & CDRA

■ CDRA Highlights

❖ Certification

➤ e-Stewards or R2

❖ CEDs

➤ Covered Electronic Devices include desktop and laptop computers, computer monitors, computer peripherals, tablets, televisions and e-readers that have a browser and internet connectivity

❖ Annual OEM Registration (\$5k)

❖ Penalty for Non-Attainment of Market Share Goal



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RMC – E-Scrap & CDRA

- CDRA Highlights

- ❖ OEM Focused
- ❖ Full cost of C, T, R
- ❖ Disposal Ban
- ❖ OEM Recycling Plan Submittal and Approval (DEP)
- ❖ Annual Pennsylvania Coverage Requirement (85%)
- ❖ DEP Prepares Annual Report



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RMC – E-Scrap & CDRA

- Electronics Waste Processing Permit Highlights
 - ❖ WMGR081 (referred to as O81 general permit)
 - Recyclers Annual Submit Weight Report (CDRA/Non-CDRA)
 - Requires Certification (after 18 months)
 - Closure Bond Requirement
 - Historically not covered Collection Points
 - 5 Ton Exemption
 - PPC/ER Plan Requirement
 - Subject to Unannounced Compliance Inspections



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RMC – E-Scrap & CDRA

■ CDRA & WMGR081 Comparison

WMGR081 Permit in PA	CDRA in PA
computer	computer
television	television
computer components such as printed circuit boards and disk drives, CD-ROMs, CD-Rs, CD-RWs, monitors, printers, mice, keyboards, wires, cables, laptop computers, notebook computers, notepad computers	computer components such as printed circuit boards and disk drives, CD-ROMs, CD-Rs, CD-RWs, monitors, printers, mice, keyboards, wires, cables, laptop computers, notebook computers, notepad computers
telecommunication, radio, electro-acoustic equipment, associated peripherals, copying equipment, electronic typewriters, calculators, telephones, facsimile machines, answering machines, satellite descramblers/receivers, video cameras, video cassette recorders, tape recorders, audio amplifiers, cassette players, record players, CD players, DVD players, vacuum cleaners, toasters, electric pencil sharpeners, blenders, small fans, desk lamps, mixers, electric grills, deep fryers, clocks/radios, curling irons, waffle makers, food processors, irons, humidifiers, microwaves, electric carving knives, electric popcorn makers, toaster ovens, power tools, crock pots, electric scales, electronic toys and games, coffee machines, blow dryers, electric shavers	N/A

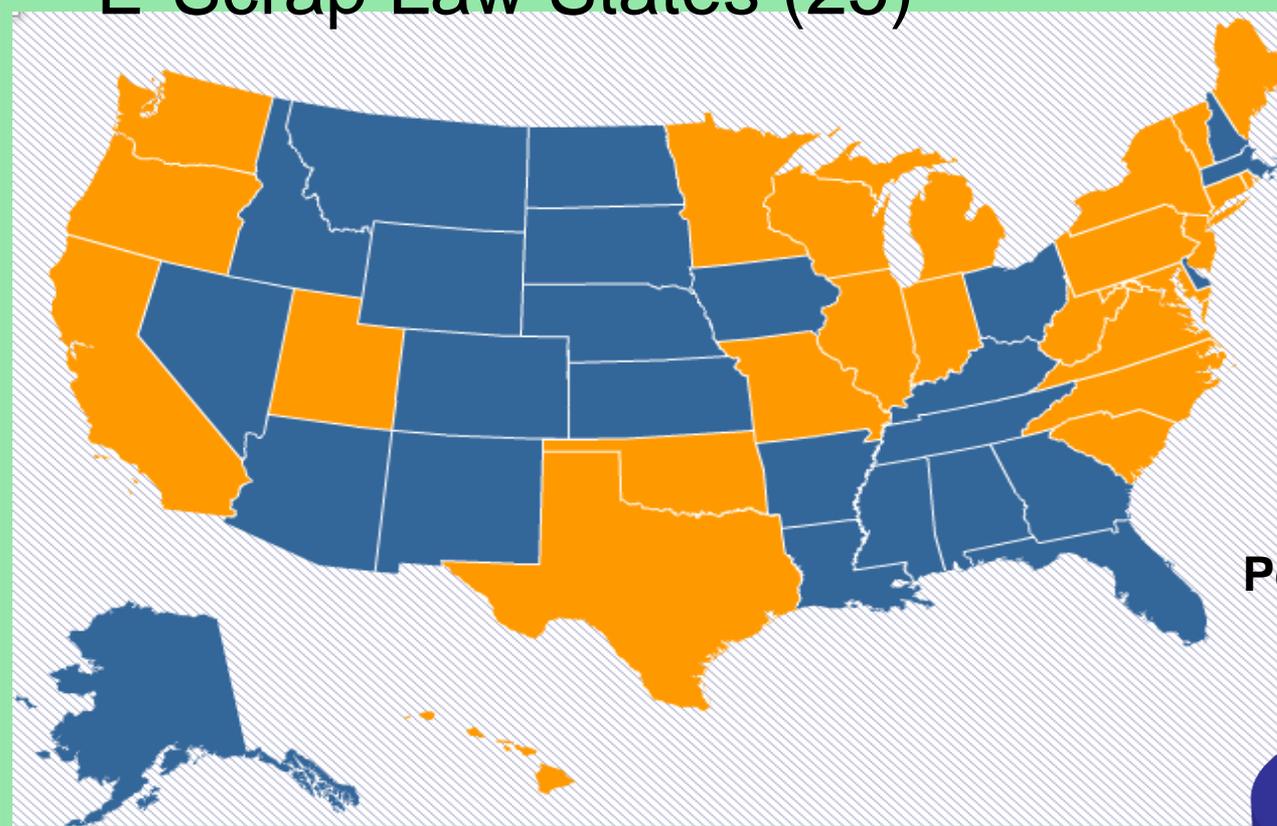


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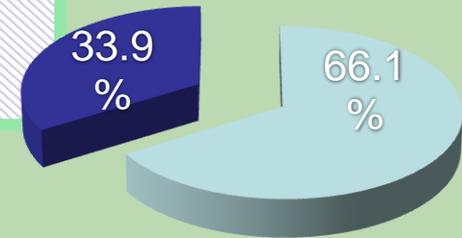
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RMC – E-Scrap & CDRA

■ E-Scrap Law States (25)



Percentage of
Population Covered
by E-Scrap Law



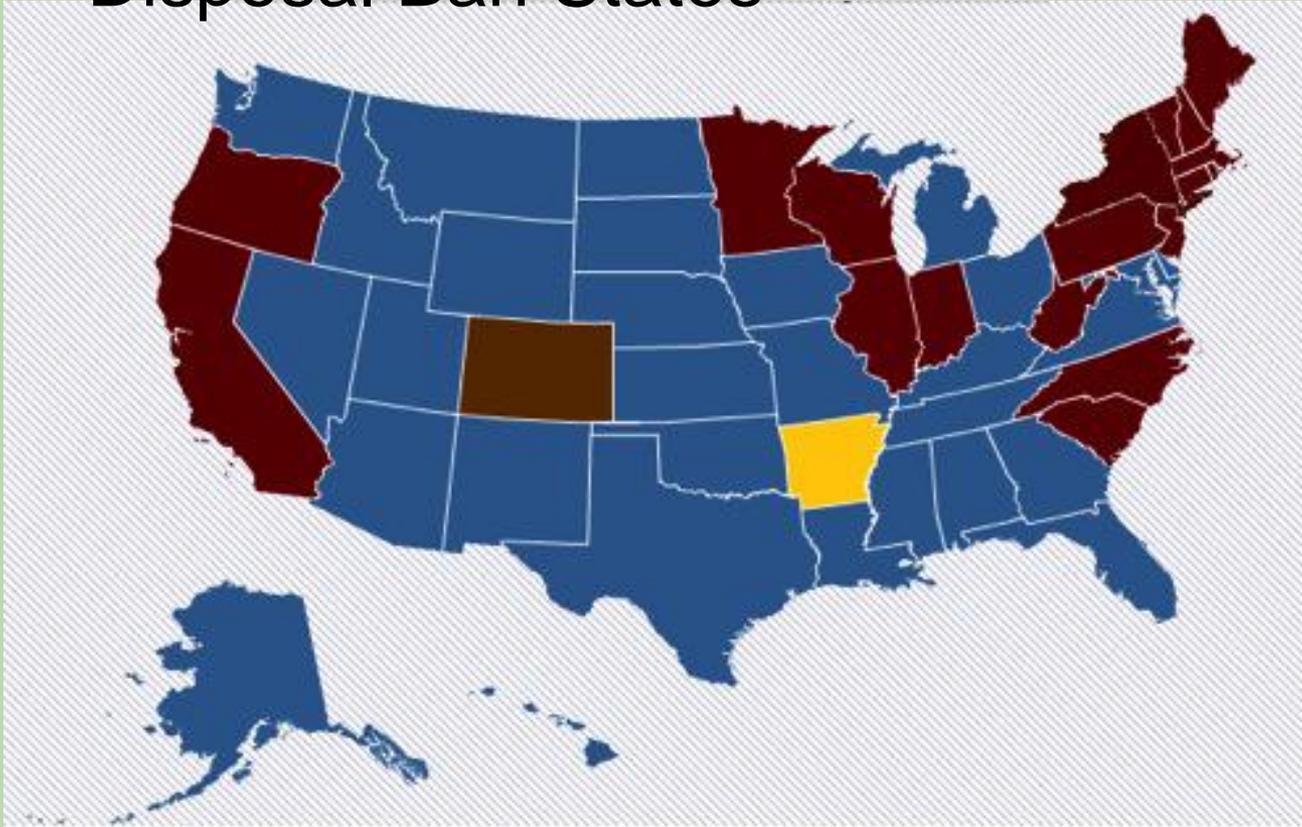
Information Courtesy of ERCC, February 2015



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RMC – E-Scrap & CDRA

- Disposal Ban States



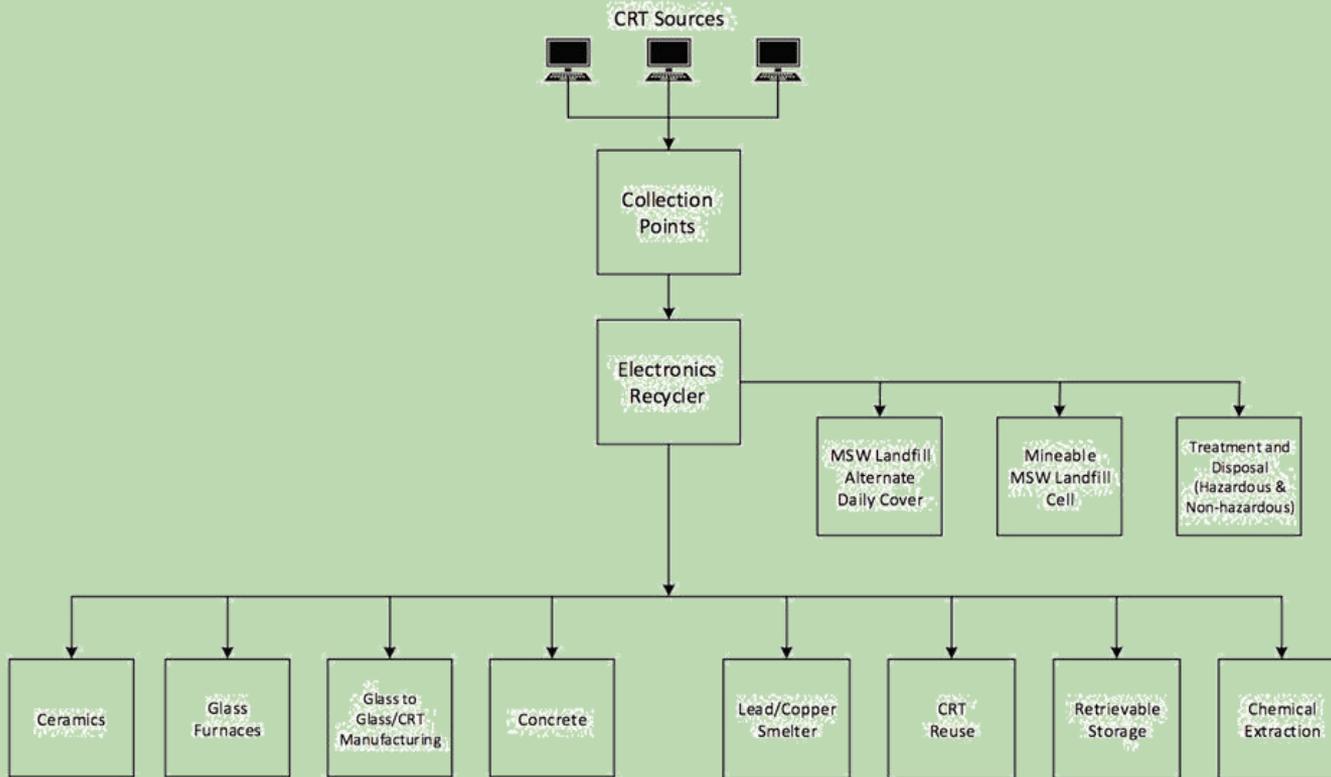
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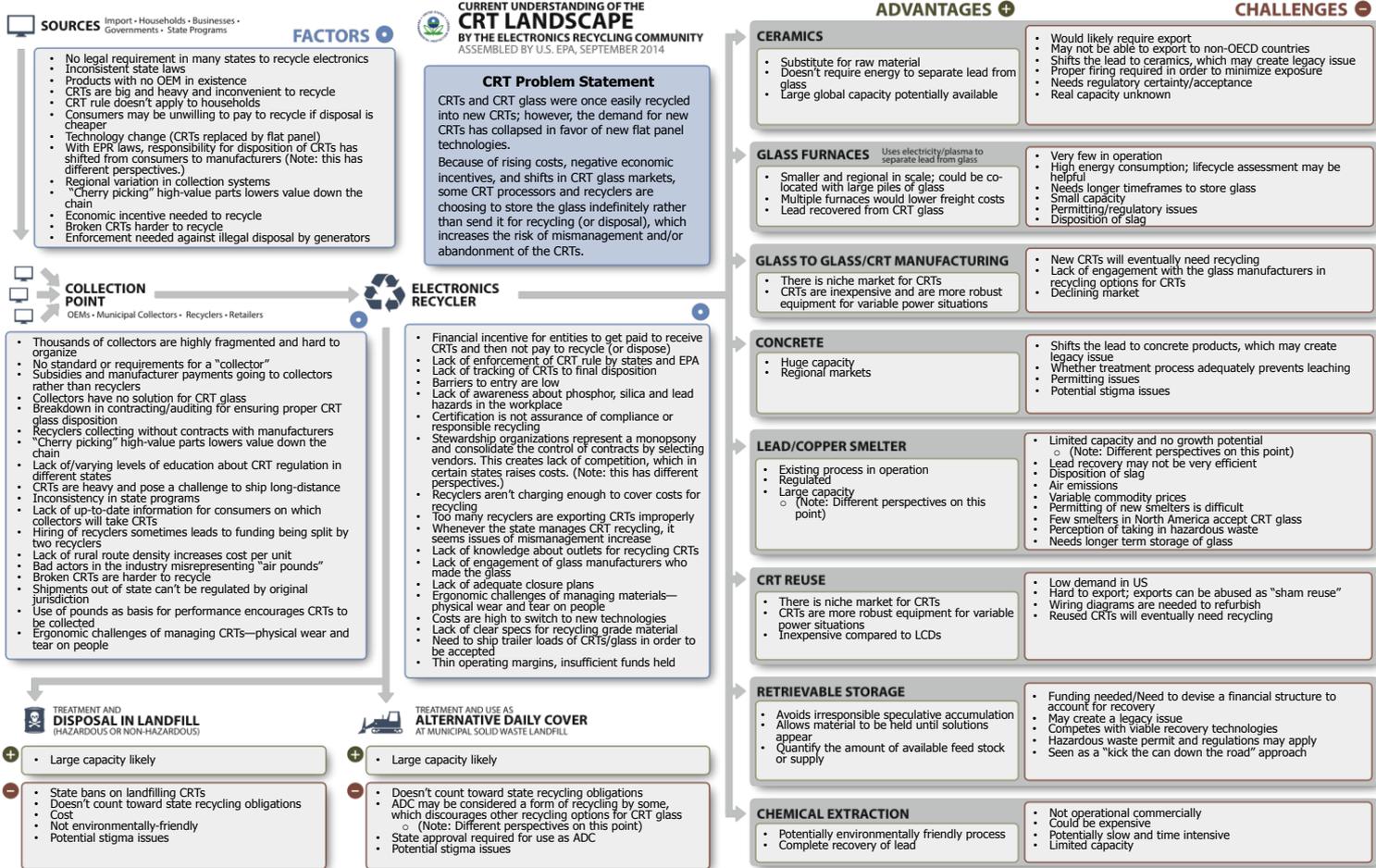
RMC – E-Scrap & CDRA

CRT Pathways



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RMC – E-Scrap & CDRA



This document compiles many suggestions received during EPA's Sustainable Materials Management Electronics Reuse and Recycling Forum held on September 23, 2014, and is provided for informational purposes only. The views and opinions expressed do not necessarily represent the views or positions of the United States Environmental Protection Agency.



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RMC – E-Scrap & CDRA

- **USEPA CRT Rule**

- ❖ **Potentially excludes (as HW) 3 Categories of CRTs**
 - Used Intact CRTs
 - Used Broken CRTs
 - Processed CRT Glass

- ❖ **Conditions include no speculative accumulation, storage & management conditions, additional export requirements and increased reporting documentation**



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RMC – E-Scrap & CDRA

- USEPA CRT Rule

- ❖ Permissible final uses for processed CRT glass include glass sent for recycling at a CRT glass manufacturer or a lead smelter. Additional exclusions may be granted for use as a fluxing agent at copper smelters or in the manufacturer of ceramic tiles. Exclusions must be coordinated through the EPA and/or State Regulatory Agencies



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RMC – E-Scrap & CDRA

■ CRT World-Wide Glass Processors



1. Cali Resources & TDA-CRT Glass Separation & Crushing. CA.
2. TDM-Prepare Crushed CRT Glass to Ship to India. Mexico.
3. Videoconn-CRT Glass to CRT Glass for New TVs. India.
4. Doe Run-Lead/Copper Smelter. MO.
5. Teck Resources-Lead/Copper Smelter. Canada.
6. Xstrata Zinc-Smelter. Canada.
7. Camacho-CRT Glass in Ceramic Tile Process. Spain.
8. Sweep Kuusakoski-Glass Furnace. England.
9. NuLife-Glass Furnace(future). NY.
10. Peoria Disposal Company-Alternate Daily Cover/Long Term Storage. IL.
11. Closed Loop Refining & Recycling-Glass Furnace(future). AZ & OH.
12. Regenesys Glass Processing-Glass Furnace(future). TX.
13. Dlubak-CRT Glass Processor. AZ & OH.
14. Com2 Recycling Solutions-CRT Glass in Ceramic Tile Process(Future). IL.



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RMC – Expertise

- Expertise

- ❖ Trained Auditor(s)

- R2, e-Stewards, ISO14001, RIOS
- Internal Audit Assistance

- ❖ National ERCC Advisor

- ❖ (4) Senior Certified Recycling Professionals

- ❖ (3) Engineering Staff

- ❖ (1) Scientist, (1) Public Policy



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RMC – Featured Successes

■ Featured Successes

❖ Summary, estimated

- Assisted ≈800 organizations, individuals, businesses
- 54 Counties, 80%
- Diversion Opportunity of ≈175,000T
- Since 2007, \$50M capital investment
- Investment return estimated \$10/\$1



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