Appendix B

Public Meeting Presentation Materials

E-waste stakeholders:

Thank you for taking Illinois EPA's E-waste survey last month. As you know, the next step in our mandated program review is to hold a public meeting at which we will present the survey findings and take additional comments and questions. To help prepare for a productive and engaging discussion, we are providing you with our meeting materials in advance of the July 29, 2015 event. We also ask that you do the following:

Ø If you plan to attend the meeting, please RSVP to me via email so that we can ensure there will be adequate seating.

Ø If you would like to speak formally at the meeting, please indicate that on your RSVP.

Ø If you prepare comments, please bring a written copy to submit to Illinois EPA.

Everyone will have an opportunity to speak, however time constraints may be imposed depending on the number of people who wish to comment. Your written submittal will assure that your full comments are taken into consideration.

Along with the attached meeting materials, is a map of the Illinois EPA complex outlining designated entrances and parking. We recommend that you park in Lot E (fenced area) off of Converse Street and access the building via the North entrance, as it is more conveniently located to the meeting room. There may be limited parking available in the North entrance visitor lot, Lot C and Lot D.

Meeting materials (10 files):

1. Program Statistics and Survey Findings.

2. Survey Analysis: Tabulated results of individual questions.

Documents 3 through 7 are the individual results for each category of respondent, including comments submitted with each question.

3. Collector responses

4. Local Government responses

5. Manufacturer responses

6. Recycler/Refurbisher responses

7. Other responses

8. Overview of other State E-waste laws

9. Open Dumping/Stockpiling issues, includes photos of Illinois incidents with an emphasis on CRTs

10. CRT-Landscape: US EPA graphical representation of the challenges posed by CRTs

Thanks for your cooperation.

Illinois Environmental Protection Agency

Electronic Recycling Program

Stakeholder Survey Results

July 29, 2015

Question 1:

Please specify whether you are or represent any one or more of the following:

Collector – 66
Recycler/Refurbisher - 42
Manufacturer - 38
Local Government – 41

Question 2:

Under existing law, manufacturers' Statewide electronic product recycling and reuse goal for program year 2015 is 36,852,133 pounds (i.e., 50% of the total weight of covered electronic devices sold in Illinois during the calendar year two years before the current year). Is that **goal** sufficient?

	Yes	No
Collector	48.48	51.52
Recycler/Refurbisher	52.38	47.62
Manufacturer	73.68	26.32
Local Government	36.59	63.41

Question 3:

Currently, each manufacturer must individually recycle an amount that is equal to at least 50% of the total weight of the covered electronic devices that it sold in Illinois two years prior. Is this **formula** for determining individual manufacturer goals fair?

	Fair	Unfair
Collector	53.03	46.97
Recycler/Refurbisher	57.14	42.86
Manufacturer	68.42	31.58
Local Government	39.02	60.98

Question 4:

This spring, the General Assembly passed House Bill 1455, which, if enacted, will modify manufacturers' annual recycling and reuse goals. Under House Bill 1455, for program year 2015, the Statewide electronic product recycling and reuse goal for television and computer monitor manufacturers is 30,800,000 pounds (i.e., approximately 80% of the total weight of televisions and computer monitors sold in Illinois two years prior), and for the same year, the Statewide electronic product recycling and reuse goal for manufacturers of all other covered electronic devices is 15,800,000 pounds (i.e., approximately 50% of the total weight of those devices sold in Illinois two years prior). For program years 2016 and 2017, respectively, the Statewide electronic product recycling and reuse goal for television and computer monitor manufacturers is

34,000,000 pounds (i.e., approximately 80% of the total weight of televisions and computer monitors sold in Illinois two years prior), and for the same two years, the Statewide electronic product recycling and reuse goal for manufacturers of all other covered electronic devices is 15,600,000 pounds (i.e., approximately 50% of the total weight of those devices sold in Illinois two years prior). Are these **goals** sufficient?

	Yes	No
Collector	56.06	43.94
Recycler/Refurbisher	64.29	35.71
Manufacturer	63.16	36.84
Local Government	48.78	51.22

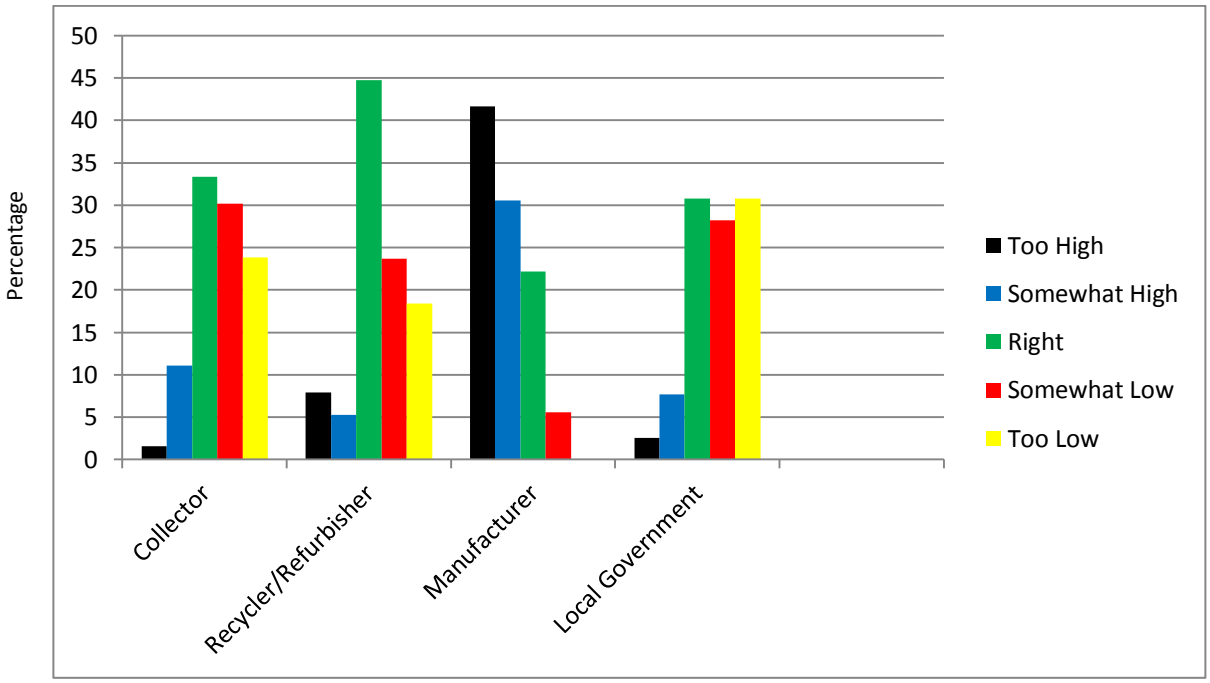
Question 5:

If House Bill 1455 becomes law, then for program years 2015 through 2017, television and computer monitor manufacturers must collectively recycle 80% of the televisions and computer monitors sold in Illinois two years prior, and the manufacturers of all other covered electronic devices must collectively recycle 50% of the total weight of all other covered electronic devices sold in Illinois two years prior. Is this **formula** for determining individual manufacturer goals fair?

	Fair	Unfair
Collector	66.67	33.33
Recycler/Refurbisher	66.67	33.33
Manufacturer	52.63	47.37
Local Government	60.98	39.02

Question 6:

Please select the statement below that best reflects your thoughts about the Statewide electronic product recycling and reuse goals for program years 2015, 2016 and 2017 as set forth in House Bill 1455.



Question 7:

The Electronic Products Recycling and Reuse Act currently allows manufacturers to obtain extra credit toward their annual recycling and reuse goals for electronic devices that are (i) processed for reuse; (ii) donated for reuse to certain entities; (iii) collected in underserved counties, or (iv) collected, recycled or refurbished by a not-for-profit corporation that employs a specified percentage of developmentally disabled persons. Are these existing credits adequate?

	Yes	No
Collector	77.78	22.22
Recycler/Refurbisher	81.58	18.42
Manufacturer	75.0	25.0
Local Government	66.67	33.33

Question 8:

Should all of the existing credits be continued?

	Yes	No
Collector	68.25	31.75
Recycler/Refurbisher	73.68	26.32
Manufacturer	97.22	2.78
Local Government	66.67	33.33

Question 9:

In addition, if House Bill 1455 becomes law, then, in program years 2015 and 2016, manufacturers will receive a credit for exceeding their recycling and reuse goals. That credit will be equal to 25% of the amount the manufacturer collects above its annual goal, and it may be (i) used in the program year after it is earned or (ii) sold to other manufacturers in the program year after it is earned. Do you feel the new credit is adequate?

	Yes	No
Collector	74.6	25.4
Recycler/Refurbisher	76.32	23.68
Manufacturer	80.56	19.44
Local Government	71.79	28.21

Question 10:

If House Bill 1455 is enacted, then should the credit (i.e., the credit manufacturers would receive for exceeding their recycling and reuse goals) created by that bill be continued?

	Yes	No
Collector	69.84	30.16
Recycler/Refurbisher	71.05	28.95
Manufacturer	100	0
Local Government	48.72	51.28

Question 11:

Do you feel that the current penalties are adequate?

	Yes	No	Unfamiliar
Collector	33.33	15.0	51.67
Recycler/Refurbisher	36.11	19.44	44.44
Manufacturer	41.67	11.11	47.22
Local Government	28.21	25.64	46.15

Question 12:

Do you feel that there is a need for the penalties to continue?

	Yes	No	Unknown
Collector	65.0	6.67	28.33
Recycler/Refurbisher	66.67	8.33	25.0
Manufacturer	36.11	25.0	38.89
Local Government	71.79	5.13	23.08

Question 13:

Although there have not been any temporary rescissions of the landfill ban, do you feel that there are circumstances when it would be beneficial to lift the landfill ban?

	Yes	No
Collector	11.67	88.33
Recycler/Refurbisher	5.56	94.44
Manufacturer	16.67	83.33
Local Government	41.03	58.97

Question 14:

Should there be a requirement for recyclers and refurbishers to be certified through a USEPA-recognized certification program?

	Yes	No
Collector	70.0	30.0
Recycler/Refurbisher	63.89	36.11
Manufacturer	63.89	36.11
Local Government	89.74	10.26

Question 15:

Do you feel that there are cost-effective and convenient options for consumers to recycle their electronics?

	Yes	No
Collector	63.3	36.67
Recycler/Refurbisher	83.33	16.67
Manufacturer	91.67	8.33
Local Government	35.9	64.10

Question 16:

Do you think consumers should be charged a fee for recycling their electronic devices?

	Yes	No
Collector	50.0	50.0
Recycler/Refurbisher	46.67	53.33
Manufacturer	66.67	33.33
Local Government	61.11	38.89

Illinois Environmental Protection Agency

Illinois Electronic Products Recycling and Reuse Act

Program Statistics

Survey Findings

July 29, 2015

Electronic Products Recycling and Reuse Act History

* **2008- PA 95-0959 (SB2313) Effective September 17, 2008**
  Electronics Recycling and Reuse Act Enacted.

* **2010 – First program year.**

* **2011 – PA 97-0287 (SB 2106) Effective August 10, 2011**
  Makes changes in provisions concerning: legislative findings; definitions; responsibilities of manufacturers of certain electronic products; responsibilities of the collectors of those products; collection strategies for underserved counties.

* **2014 – PA 98-0714 (HB4227) Effective July 16, 2014**
  Reduces the number of categories of electronic items manufacturers and collectors must segregate, weigh and report to the IEPA.

* **2015 – PA 99-0013 (HB1455) – Effective July 10, 2015**
  Increases manufacturer goals; requires recyclers and refurbishers to have R2, e-steward or some other USEPA approved certification; changes manufacturer penalties; added an additional manufacturer credit; CRT glass storage.

Manufacturers Registered - Program Years

2010 – 81

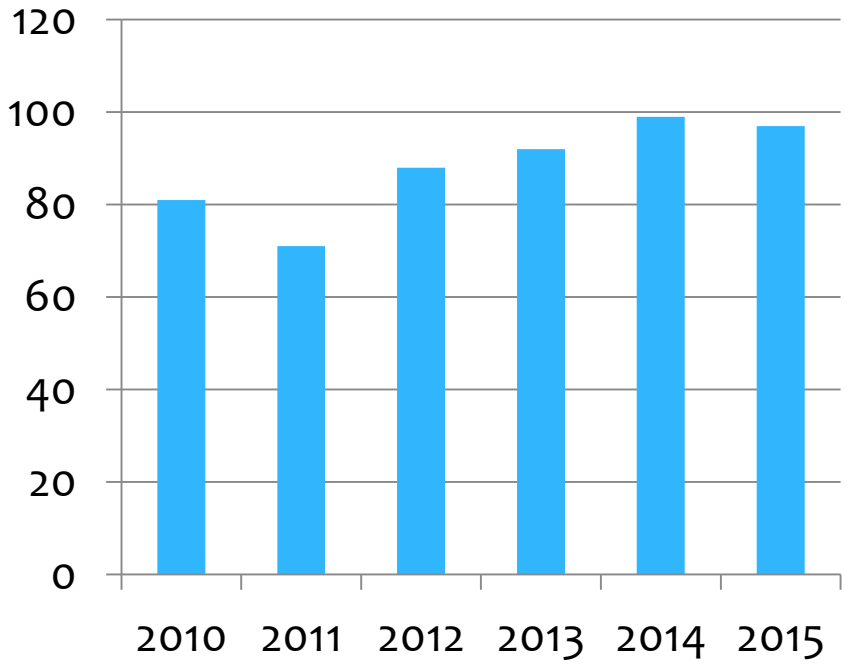
2011 – 71

2012 – 88

2013 – 92

2014 – 99

2015 – 97

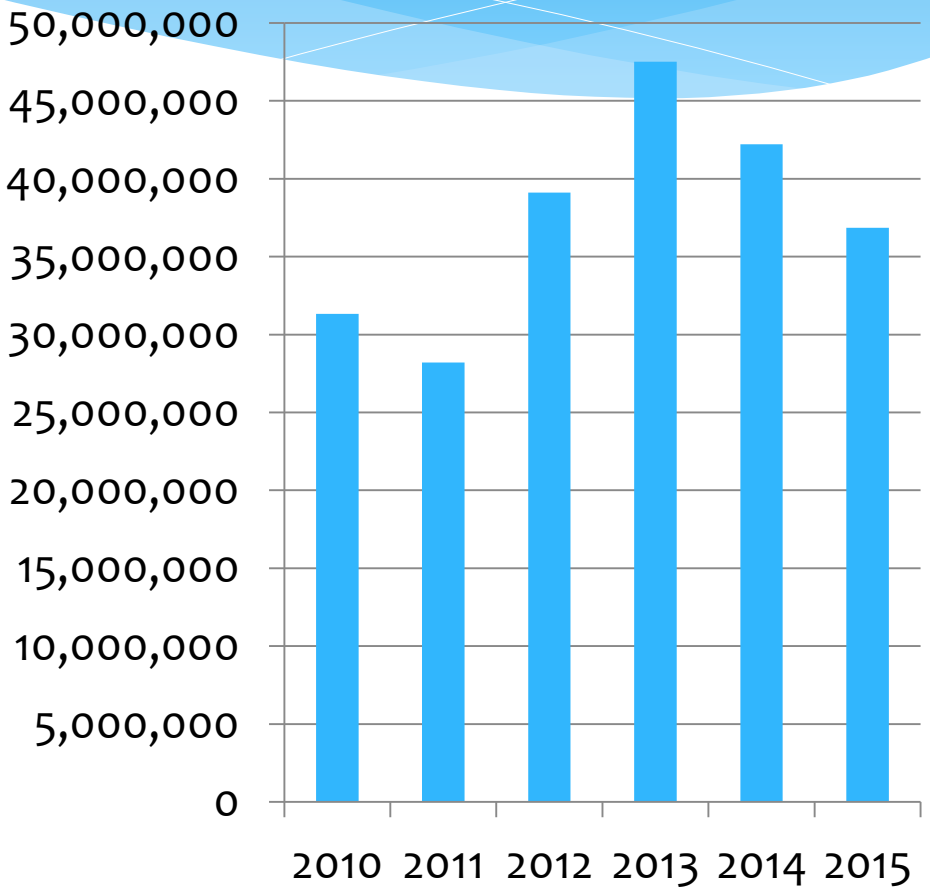


Manufacturer Goals in Pounds

2010 – 31,336,903
2011 – 28,203,213
2012 – 39,116,413
2013 – 47,502,372
2014 – 42,204,162
2015 – 36,852,133
46,600,000

New 2015 goal as a result of HB1455 signed into law July 10, 2015.

2012 =40% of sales
2013 and thereafter=50% of sales



Manufacturer Pounds Recycled

2010 – 32,921,667

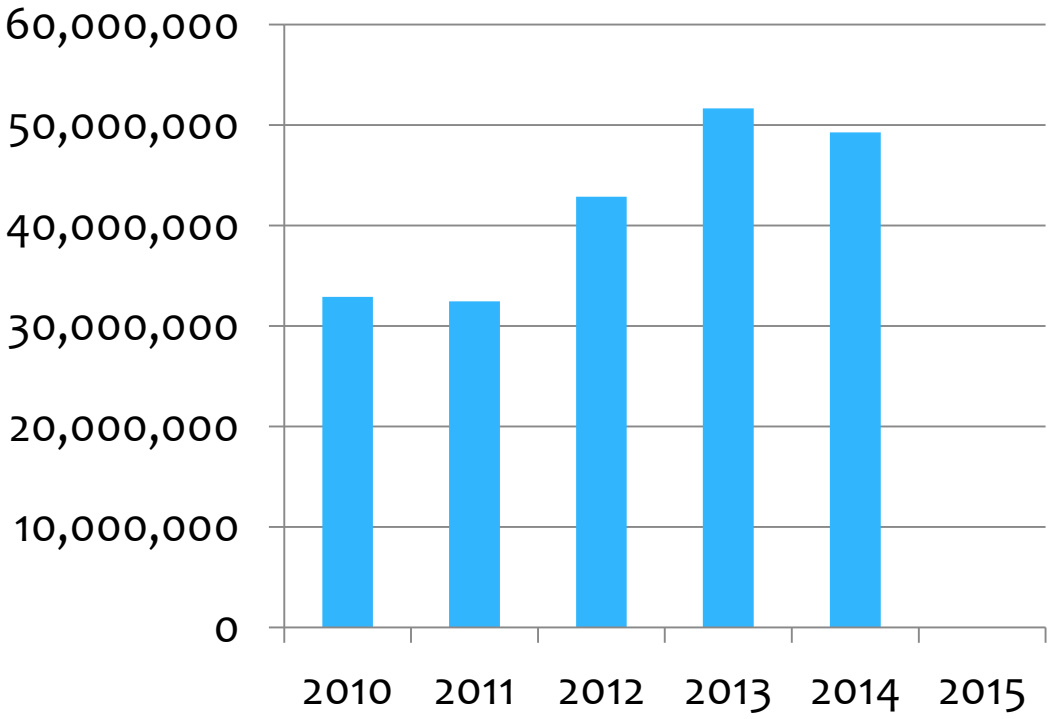
2011 – 32,466,674

2012 – 42,867,533

2013 – 51,657,615

2014 – 49,287,827

2015 –Report due 1/31/16



Manufacturer Goals Compared to Pounds Recycled

Goals in Pounds

2010 – 31,336,903
2011 – 28,203,213
2012 – 39,116,413
2013 – 47,502,372
2014 – 42,204,162
2015 – 36,852,133
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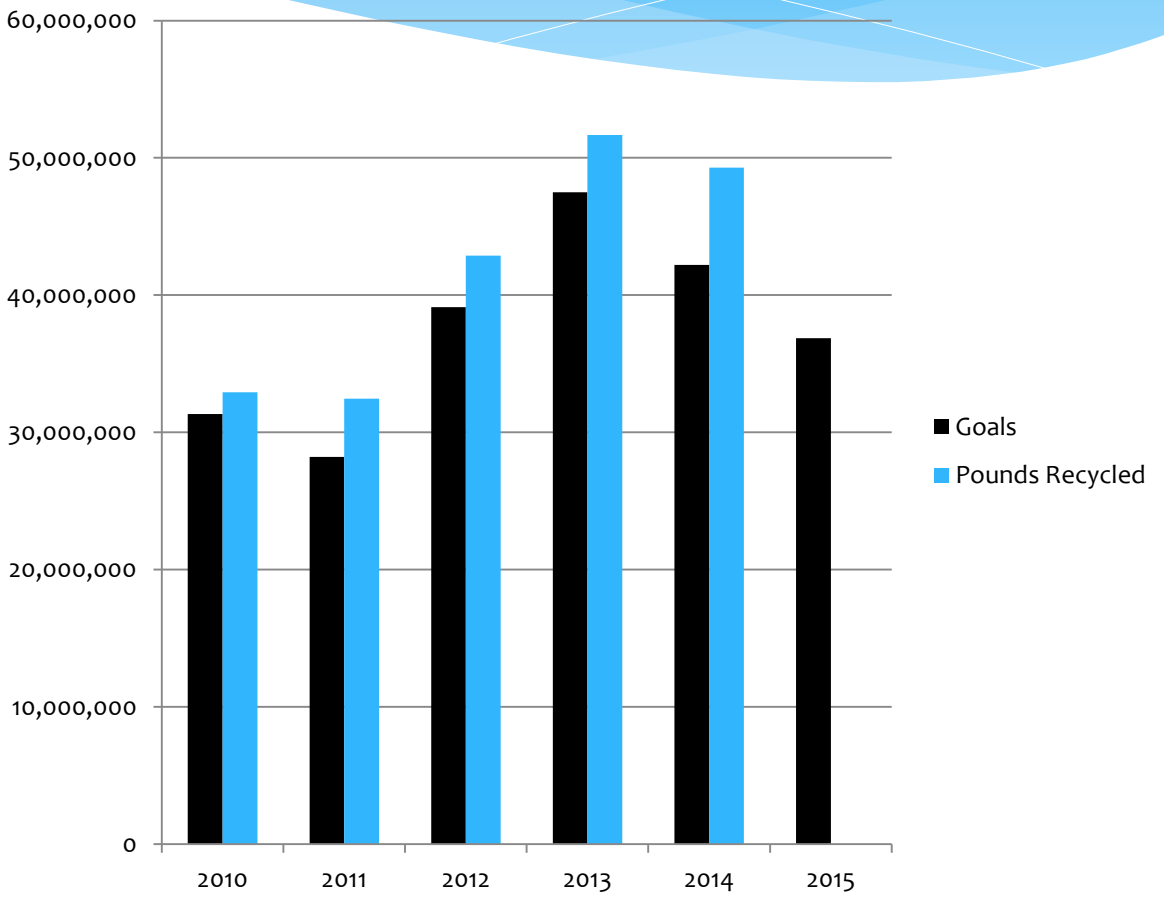
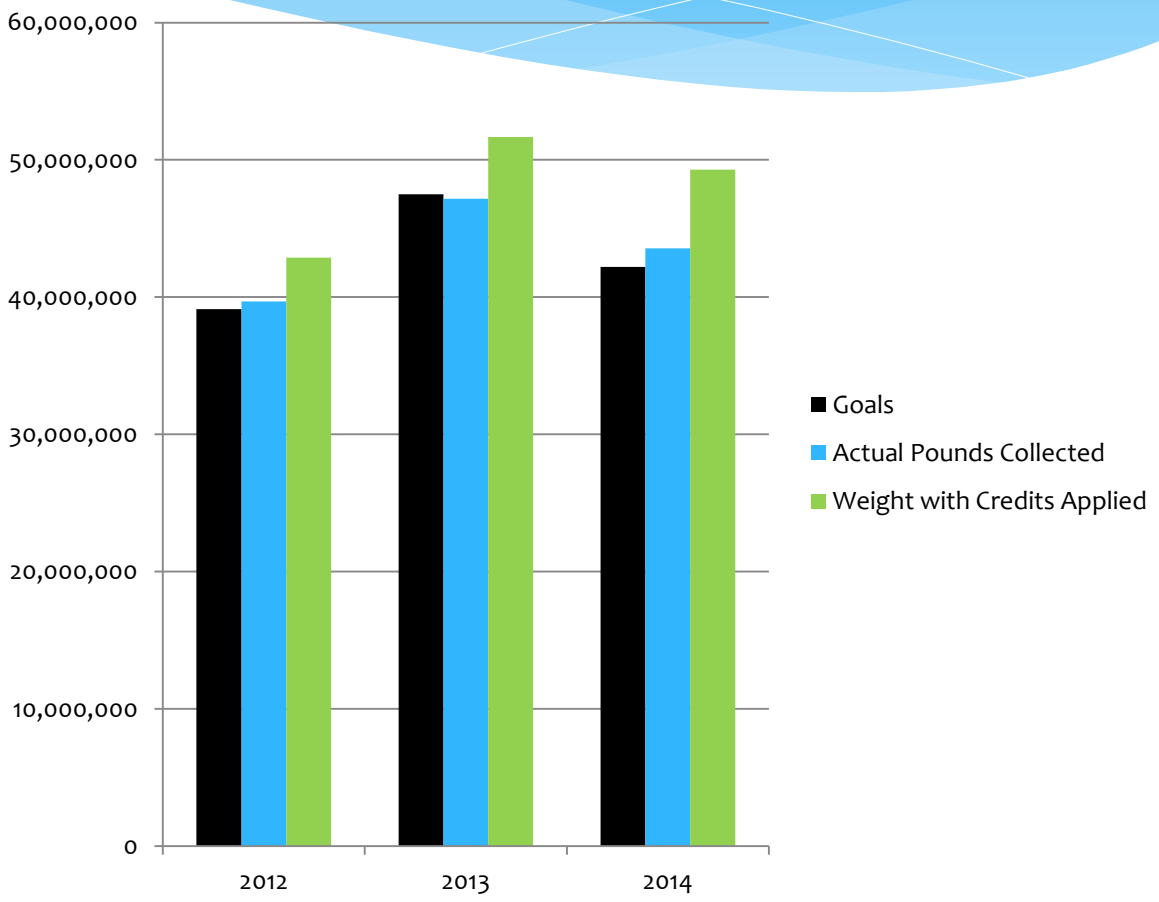


Manufacturer Goals/Actual Pounds Collected/Weight with Credits Applied

2012
Goals
39,116,413
Actual Pounds Collected
39,682,409
Weight with Credits Applied
42,867,553

2013
Goals
47,502,372
Actual Pounds Collected
47,174,395
Weight with Credits Applied
51,657,615

2014
Goals
42,204,162
Actual Pounds Collected
43,544,058
Weight with Credits Applied
49,287,827



Manufacturer Credits

* **Processed for reuse – *double credit***
* **Collected in an underserved county – *double credit***
  (underserved county – 190 persons or less per square mile)

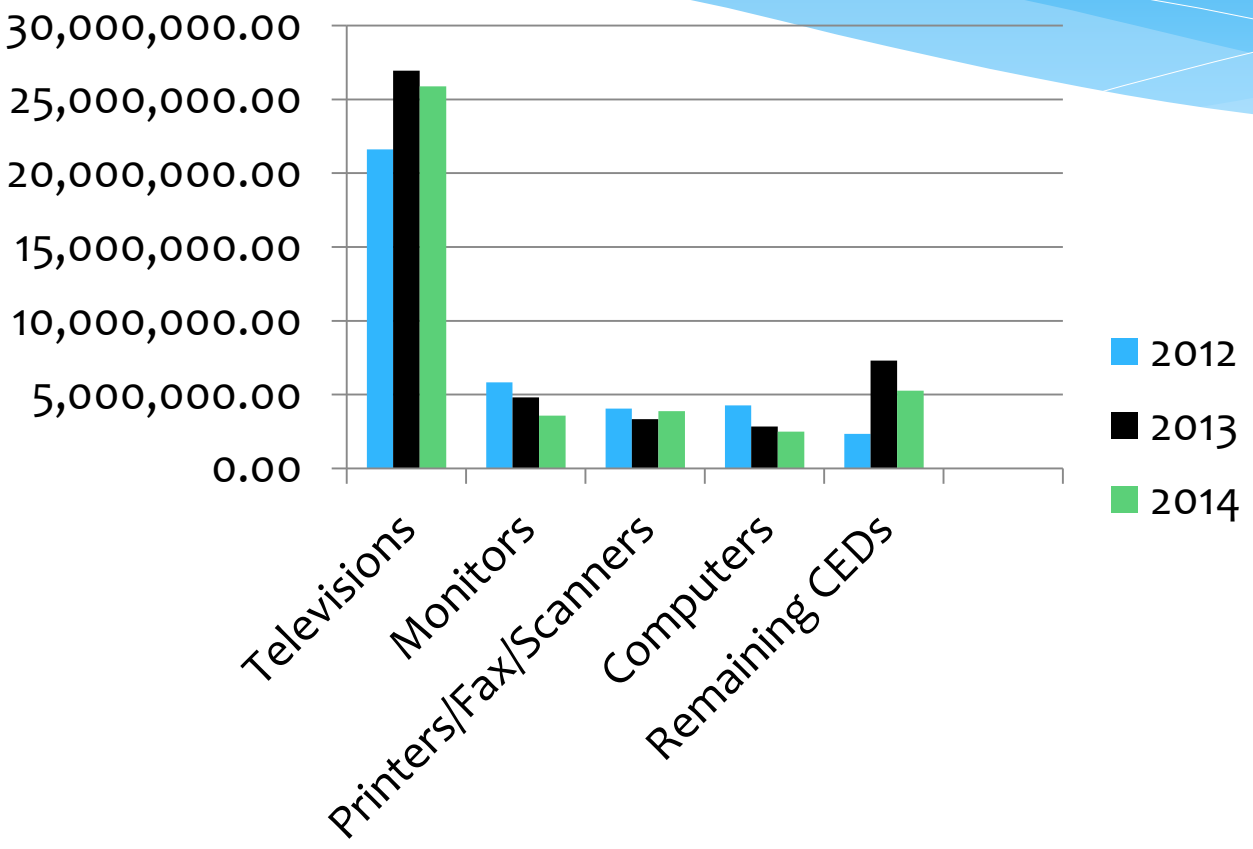
* **Donated for reuse to a primary or secondary public education institution where the majority of the students are considered low income or developmentally disabled – *triple credit***
* **If an entity collects, recycles or refurbishes for a manufacturer and qualifies for non-profit status according to the Internal Revenue Code 501(c)(3), and at least 75% of its employees are developmentally disabled – *triple credit***

An additional credit under HB1455:

A manufacturer may earn recycling credit equal to 25% of the weight the manufacturer collects over its target.

This 25% credit can be applied to the manufacturers' next program year goal or sold to another manufacturer for use in the next program year.

Pounds Recycled By Device



Covered Electronic Devices:

Cable Receivers
Computers (laptop, notebook, netbook, tablet, desktop)
Digital Converter Boxes
Digital Video Disc Players
Digital Video Disc Recorders
Electronic Keyboards
Electronic Mice
Facsimile Machines
Monitors
Portable Digital Music Players
Printers
Satellite Receivers
Scanners
Small Scale Servers
Televisions
Videocassette Recorders
Video Game Consoles

Eligible Electronic Devices:

Cell Phones
Portable Digital Assistant (PDA)
Computer Cables
Zip Drive

Grants

2013 – 47 applied, 46 approved*

2014 – 30 applied, 30 approved

2015 – 33 applied, 32 approved*

A portion of the manufacturer, recycler, and refurbisher registration fees enables Illinois EPA to provide a $2,000 grant to the recycling coordinator in each county of the State in order to inform residents about this Act and opportunities to recycle covered and eligible electronic devices.

***Two counties applied for the grant but did not return the signed paperwork.**

Registered Collectors/Recyclers/Refurbishers

2010 – 98 (10 of the 98 were not collectors)

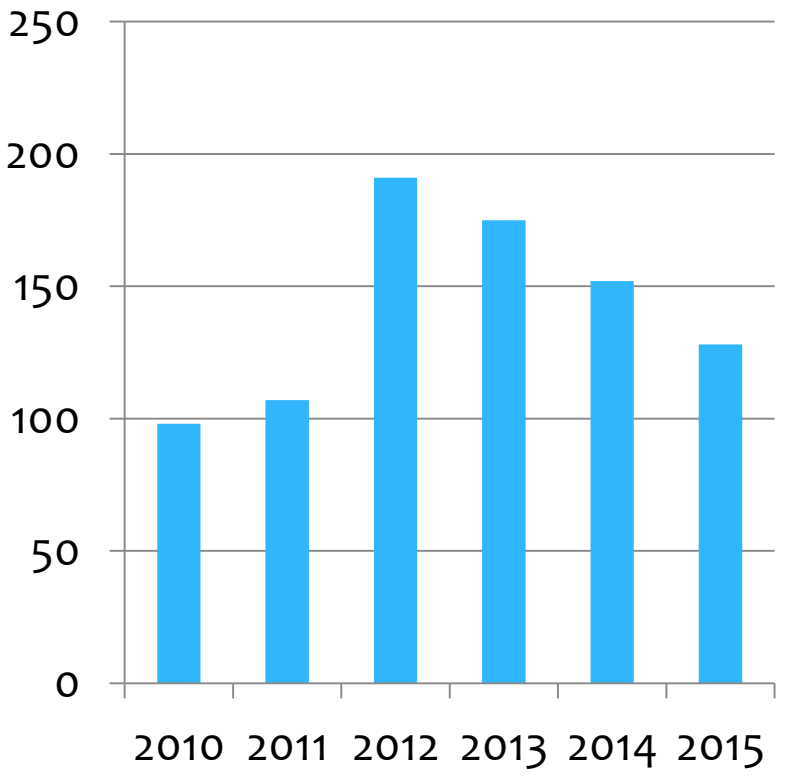
2011 – 107 (8 of the 107 were not collectors)

2012 – 191 (13 of the 191 were not collectors)

2013 – 175 (18 of the 175 were not collectors)

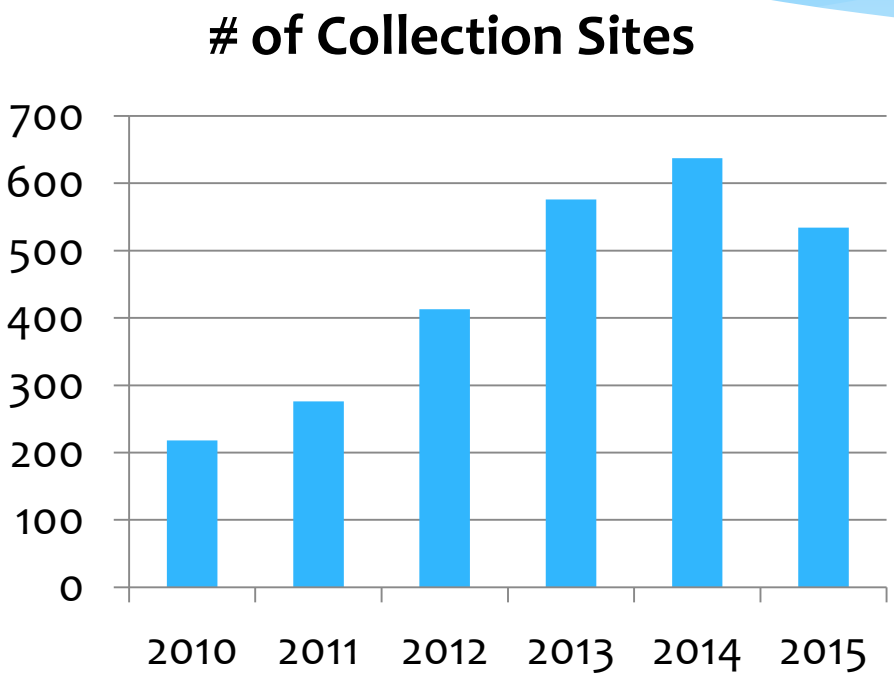
2014 – 152 (19 of the 152 were not collectors)

2015 – 128 (15 of the 128 were not collectors)



Registered Collection Location Sites

2010 – 218
2011 – 276
2012 – 413
2013 – 576
2014 – 637
2015 – 534



Of the 534 collection locations:

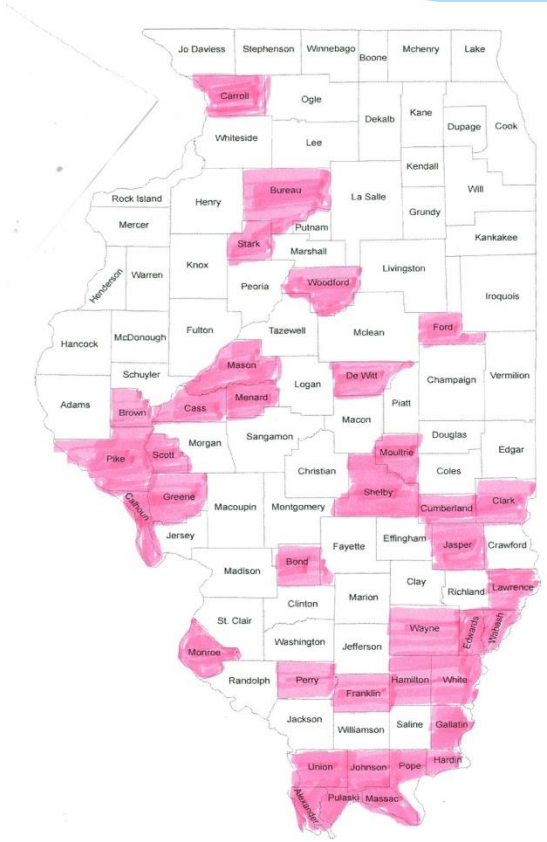
135 – Cook
57 – DuPage
31 – Lake
21 – Will

244 (45.69%) of the collection sites are in these four counties.

Registered Collection Location Sites

In program year 2015, of the 102 counties, 37 have no collection opportunities for residents:

Alexander
Bond
Brown
Bureau
Calhoun
Carroll
Cass
Clark
Cumberland
DeWitt
Edwards
Ford
Franklin
Gallatin
Greene
Hamilton
Hardin
Jasper
Johnson
Lawrence
Mason
Massac
Menard
Monroe
Moultrie
Perry
Pike
Pope
Pulaski
Scott
Shelby
Stark
Union
Wabash
Wayne
White
Woodford



Electronic Recycling Survey

Issued June 1, 2015 to solicit written comments as required by Section 20(j).

Grouping of individuals who took the survey. ***More than one*** can apply to an individual.

* Collector - 43.1%
* Recycler/Refurbisher – 27.5%
* Manufacturer – 24.8%
* Local Government – 26.8%
* Other 6.5%

Manufacturer Goals/Formulas

Are the current goals fair?

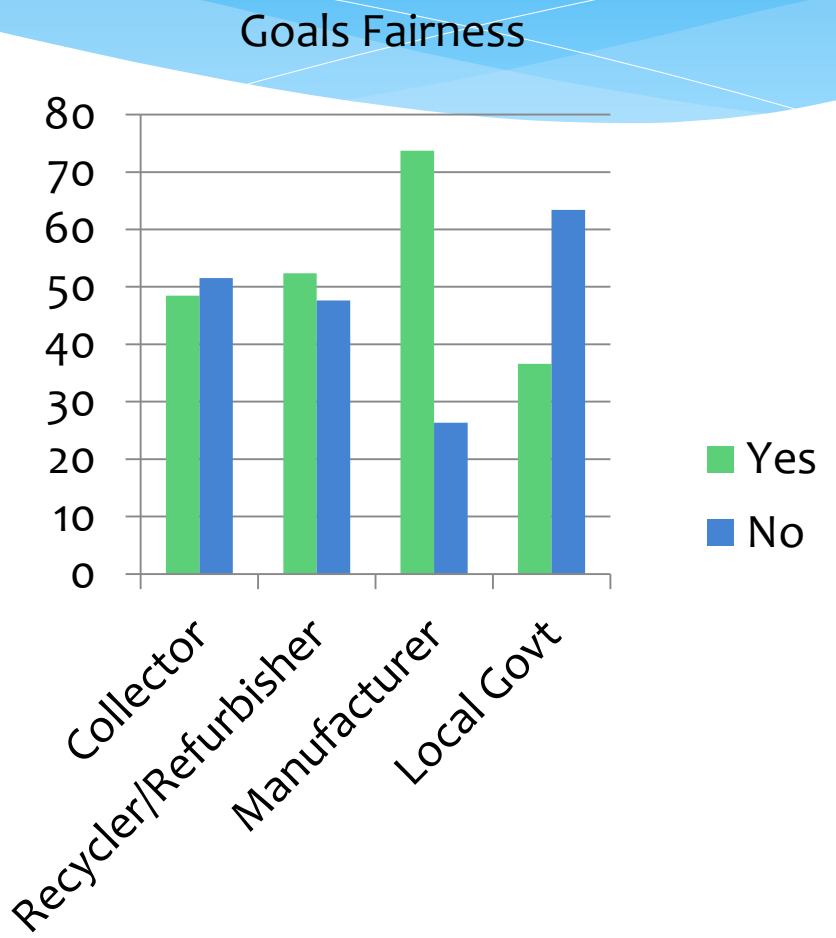
55.6% - Yes

44.4% - No

Is the current formula for calculating goals fair?

54.9% - Fair

45.1% - Unfair



Manufacturer Goals/Formulas

HB 1455 proposes 80% share for television and monitor manufacturers and 50% share for manufacturers of all other covered devices. Resulting in 2015-2017 goals of:

2015

30.8 million for television/monitor

15.8 million for other

2016 & 2017

34.0 million for television/monitor

15.6 million for other

Manufacturer Goals/Formulas

Are these goals sufficient?

58.8% - Yes

41.2% - No

Is the formula fair?

62.1% - Yes

37.9% - No

Are the 2015-2017 goals:

Much too high – 13.9%

Somewhat high – 16.7%

Just about right – 31.9%

Somewhat low – 19.4%

Much too low – 18.1%

Manufacturer Credits

Are the existing credits adequate?
75.7% - Yes
24.3% - No

Should they be continued?
75.7% - Yes
24.3% - No

HB1455 allows an additional credit equal to 25% of the amount the manufacturer collects over their goal. Is this credit adequate?
75.7% - Yes
24.3% - No

If HB1455 is enacted, should the 25% credit be continued?
73.6% - Yes
26.4% - No

Manufacturer Penalties

Are the current penalties accurate?

32.9% - Yes

18.6% - No

48.6% - Unfamiliar

Should penalties continue?

57.1% - Yes

11.4% - No

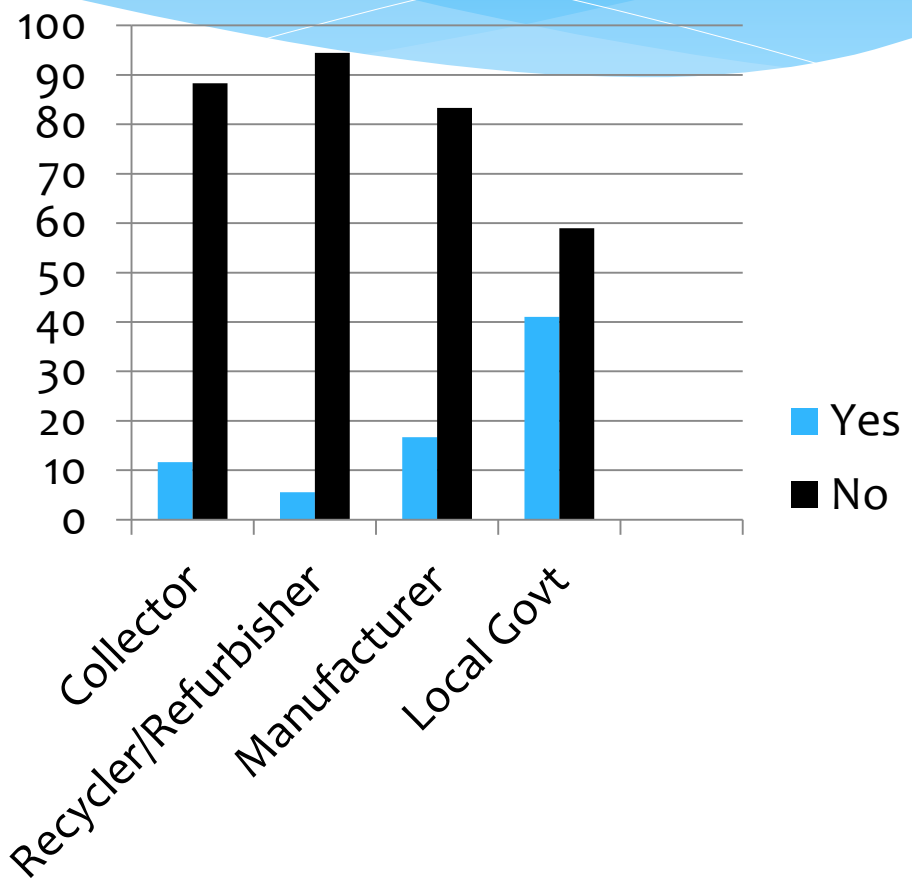
31.4% - Unfamiliar

Rescission of Landfill Ban

Do you feel there are circumstances when lifting the landfill ban would be beneficial?

24.3% - Yes

75.7% - No

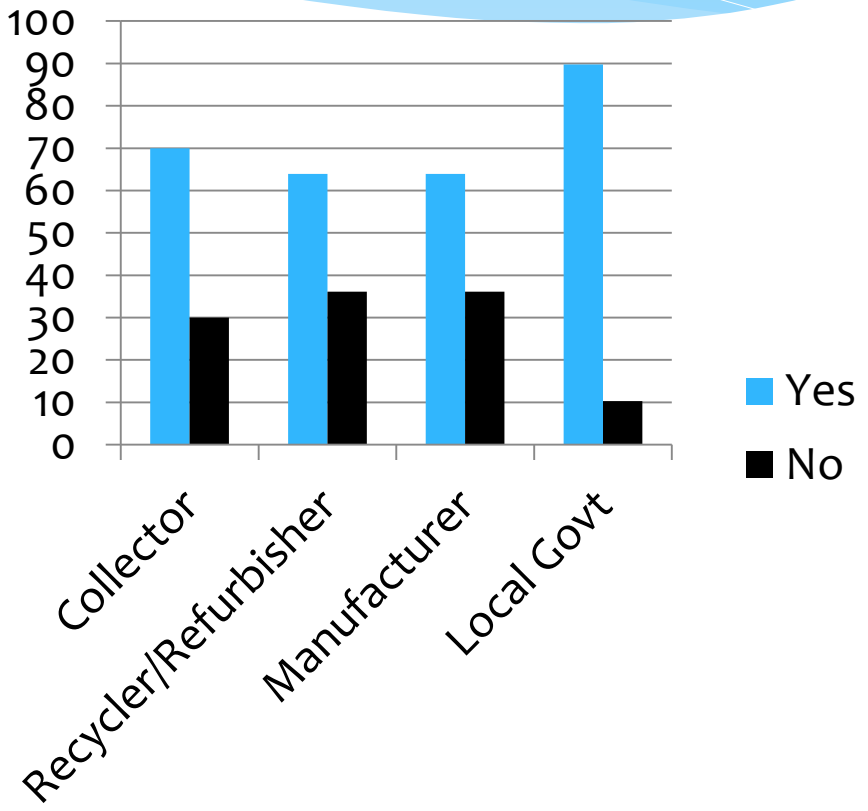


Certification for Recycler/Refurbishers

Do you feel recyclers and refurbishers should be certified through a USEPA-recognized certification program?

72.9% - Yes

27.1% - No

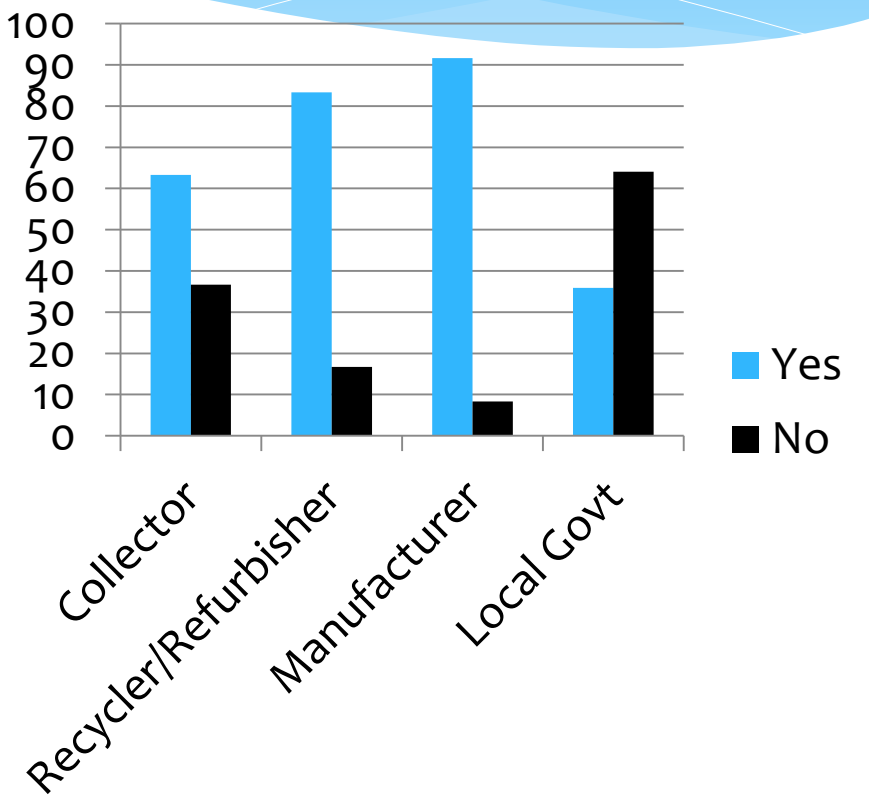


Options for Recycling

Do you feel there are convenient options for consumers to recycle their electronics?

67.1% - Yes

32.9% - No

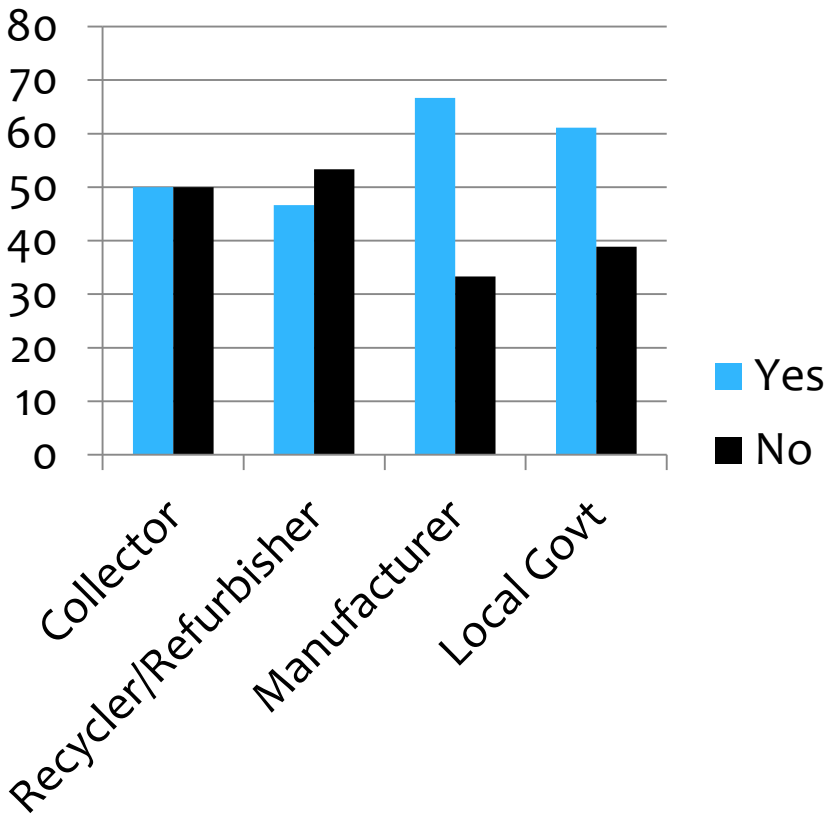


Fees for Recycling

Do you think a consumer should be charged a fee for recycling their electronics?

58.7% - Yes

41.3% - No



Illinois Environmental Protection Agency

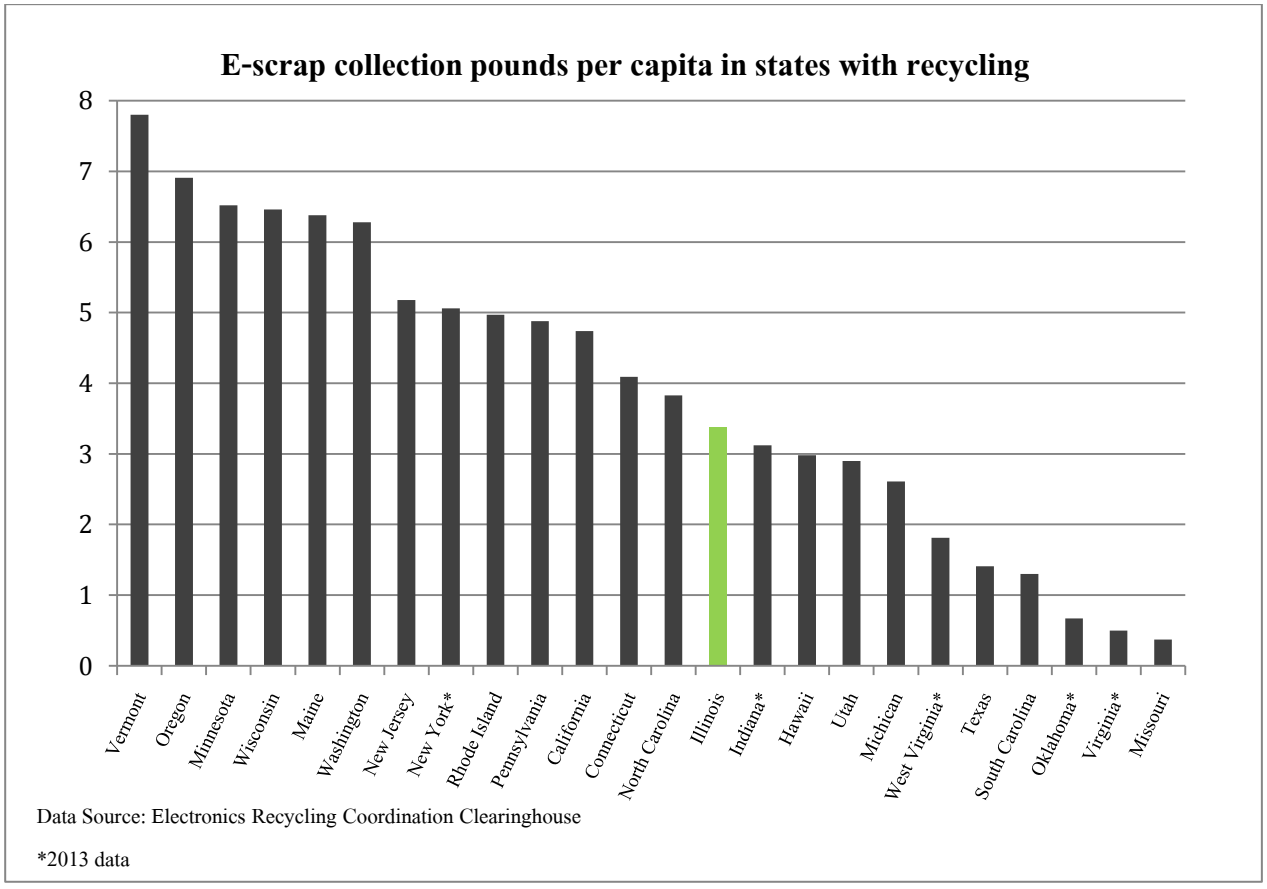
Electronic Recycling Program

Other States Review

July 29, 2015

Overview: E-waste State Laws

- To date, 25 states have passed laws to encourage the recycling of scrap electronics.
- Of these, 23 state laws rely on a model known as **extended producer responsibility** (**EPR**), where manufacturers fund the recycling infrastructure for products at end-of-life.
- Two states rely on different approaches: California, which adopted the consumer-funded **advanced recovery fee (ARF)** model, and Utah, which focused on consumer education.



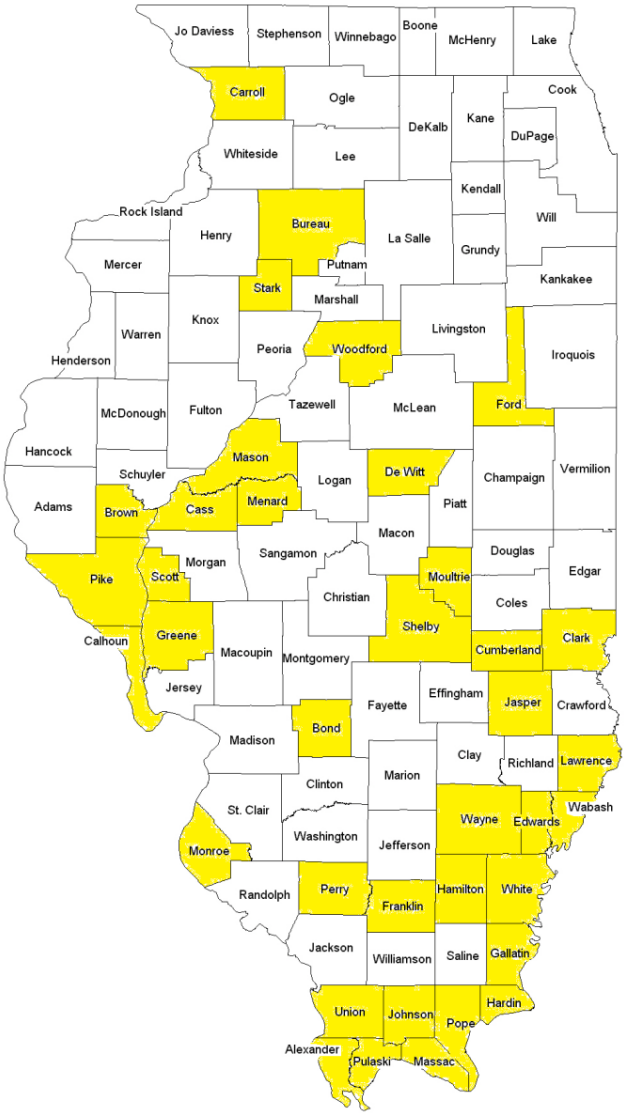
- The states with the highest volume of e-waste collected (on a per capita basis) are Vermont, Oregon and Minnesota. States with very low per capita collection are Oklahoma, Virginia and Missouri.
- In 2014, Illinois collected 3.37 pounds of e-scrap per capita and ranked 14th highest among the 25 states with e-waste legislation.
- Most state electronics programs implement collection targets and/or convenience standards.
- The most stable and effective programs—in Vermont, Oregon and Washington, for example—are driven by convenience standards.

Collection Targets

- States that use **collection targets** provide each manufacturer with a goal of how much e-scrap it must collect. Typically this figure is expressed as a number of pounds, based on either a percentage of the manufacturer's sales or its share of a statewide goal.
- States that rely on collection targets, also known as performance standards, include Illinois, Minnesota, New Jersey, New York, Pennsylvania and Wisconsin.
- A common problem has arisen for states using performance standards: manufacturer funding has not covered the full cost of e-scrap recycling.
- Often, manufacturers pay for the collection and recycling of the amount of e-scrap they are required to collect, stopping once their goals have been reached. These goals are sometimes met midway through the year.

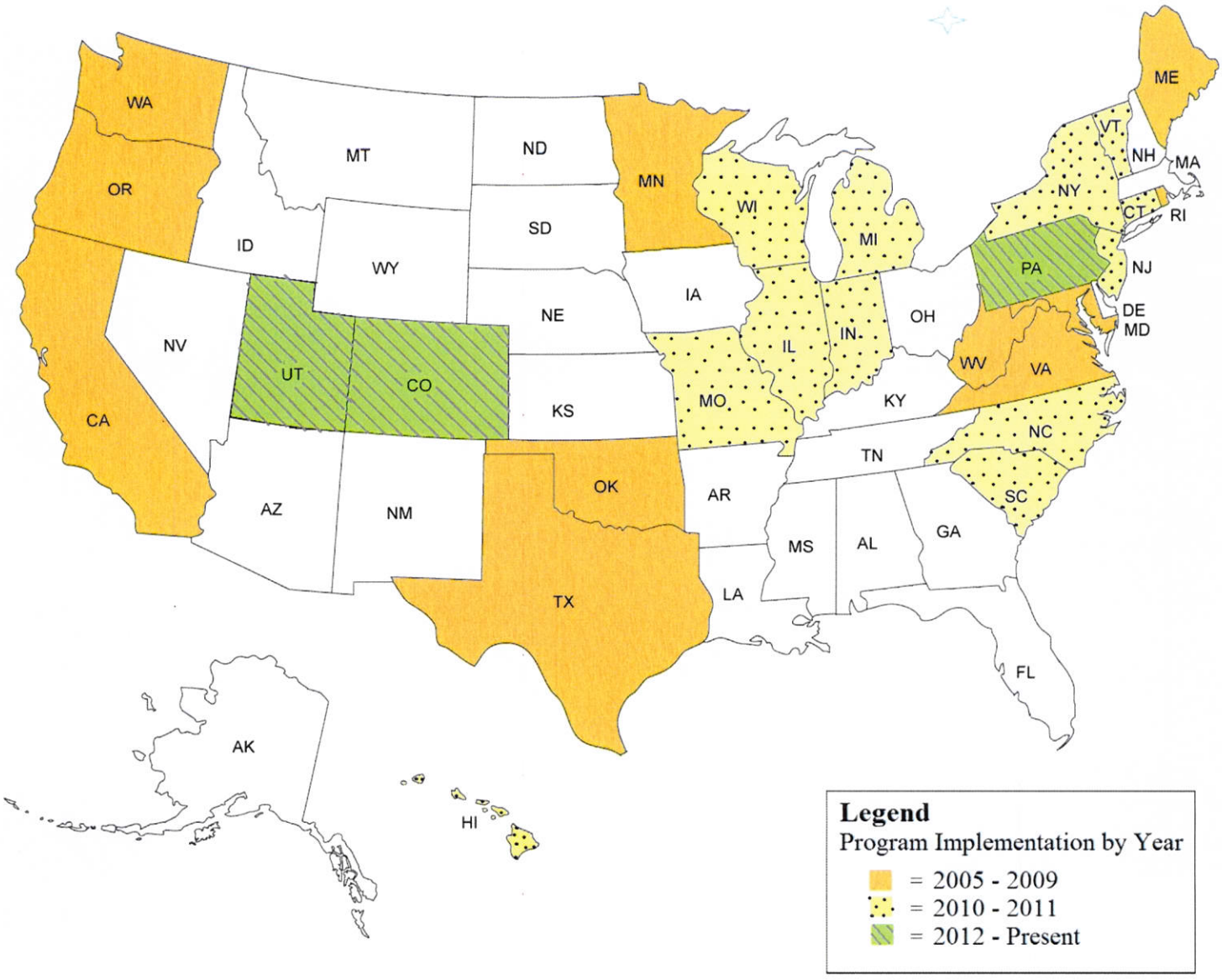
Convenience Standards

- For the current program year, there are no e-waste collection opportunities for 37 out of 102 counties in Illinois.
- States that offer robust collection opportunities with year-round financial support, regardless of volumes collected, implement **convenience standards** in their e-waste laws.
- **Convenience standards** require manufacturers to operate enough collection opportunities to meet a specific standard of convenience for consumers wanting to properly dispose of their electronics (e.g., one collection site per county, one collection site for every community with a population greater than 10,000, etc.).
- Government typically ensures accountability and coordination in these programs by contracting for the management of a statewide collection network. This is funded by the manufacturers.
- There are eight states that prescribe minimum convenience standards, including: Connecticut, Maine, New Jersey, New York, Oregon, Vermont, Washington and Rhode Island.
- Oregon and Washington both require at least one collection site or service in every county, as well as one collection site in each city with a population of 10,000 or more. New Jersey requires each county to have at least one collection site.



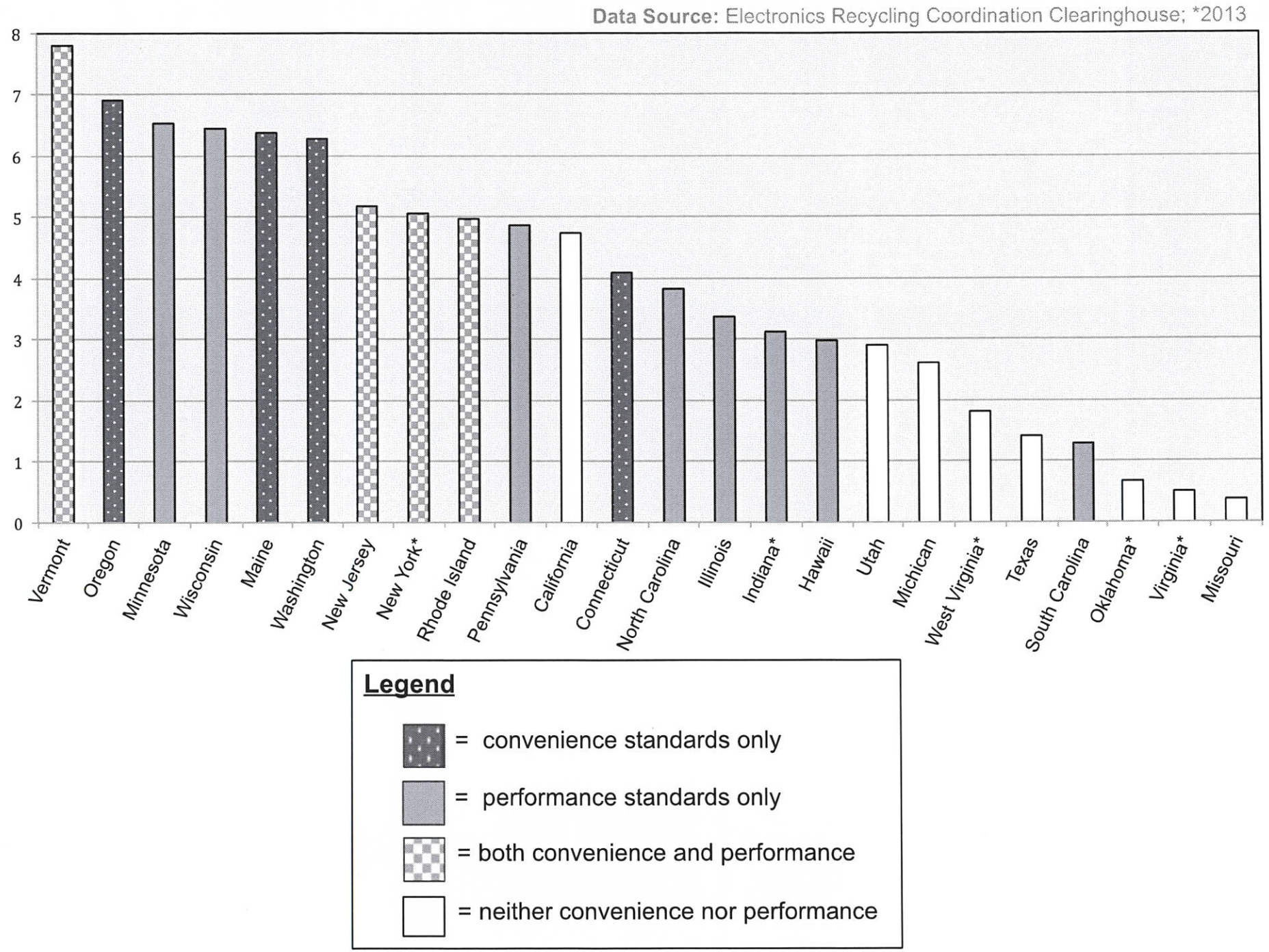
Illinois counties without e-scrap collection facilities.

U.S. Electronics Program Maturity Map



E-scrap collection pounds per capita in states with recycling laws, 2014

UPDATE: Performance and Convenience Standards Data



Open Dumping and Stockpiling

Problems with Open Dumping

* Risk of exposure to heavy metals from broken or crushed CRT glass
* Increases threat to the environment from leaching metals into soil and groundwater
* Increases costs to local government for clean up and disposal

Hazards of Open Dumping


East St. Louis

- CRTs make up 60-70% of the weight of the TV
- Average 4 pounds of lead

Strain on Local Government

, Lawrenceville, IL

- Local government pays for clean up
- Overnight dumping at drop off locations
- Broken CRTs present problems

Stockpiling

Creative Recycling

- One of several facilities
- 10% their inventory was in Illinois

Eagle Recycling

Eagle Recycling

- 2,300 pounds of monitors
- 3,975 pounds of TVs

Eagle Recycling

CURRENT UNDERSTANDING OF THE CRT LANDSCAPE
BY THE ELECTRONICS RECYCLING COMMUNITY
ASSEMBLED BY U.S. EPA, SEPTEMBER 2014

SOURCES
Import • Households • Businesses • Governments • State Programs

FACTORS
- No legal requirement in many states to recycle electronics
- Inconsistent state laws
- Products with no OEM in existence
- CRTs are big and heavy and inconvenient to recycle
- CRT rule doesn't apply to households
- Consumers may be unwilling to pay to recycle if disposal is cheaper
- Technology change (CRTs replaced by flat panel)
- With EPR laws, responsibility for disposition of CRTs has shifted from consumers to manufacturers (Note: this has different perspectives.)
- Regional variation in collection systems
- "Cherry picking" high-value parts lowers value down the chain
- Economic incentive needed to recycle
- Broken CRTs harder to recycle
- Enforcement needed against illegal disposal by generators

CRT Problem Statement
CRTs and CRT glass were once easily recycled into new CRTs; however, the demand for new CRTs has collapsed in favor of new flat panel technologies.

Because of rising costs, negative economic incentives, and shifts in CRT glass markets, some CRT processors and recyclers are choosing to store the glass indefinitely rather than send it for recycling (or disposal), which increases the risk of mismanagement and/or abandonment of the CRTs.

COLLECTION POINT
OEMs • Municipal Collectors • Recyclers • Retailers

- Thousands of collectors are highly fragmented and hard to organize
- No standard or requirements for a "collector"
- Subsidies and manufacturer payments going to collectors rather than recyclers
- Collectors have no solution for CRT glass
- Breakdown in contracting/auditing for ensuring proper CRT glass disposition
- Recyclers collecting without contracts with manufacturers
- "Cherry picking" high-value parts lowers value down the chain
- Lack of/varying levels of education about CRT regulation in different states
- CRTs are heavy and pose a challenge to ship long-distance
- Inconsistency in state programs
- Lack of up-to-date information for consumers on which collectors will take CRTs
- Hiring of recyclers sometimes leads to funding being split by two recyclers
- Lack of rural route density increases cost per unit
- Bad actors in the industry misrepresenting "air pounds"
- Broken CRTs are harder to recycle
- Shipments out of state can't be regulated by original jurisdiction
- Use of pounds as basis for performance encourages CRTs to be collected
- Ergonomic challenges of managing CRTs—physical wear and tear on people

ELECTRONICS RECYCLER

- Financial incentive for entities to get paid to receive CRTs and then not pay to recycle (or dispose)
- Lack of enforcement of CRT rule by states and EPA
- Lack of tracking of CRTs to final disposition
- Barriers to entry are low
- Lack of awareness about phosphor, silica and lead hazards in the workplace
- Certification is not assurance of compliance or responsible recycling
- Stewardship organizations represent a monopsony and consolidate the control of contracts by selecting vendors. This creates lack of competition, which in certain states raises costs. (Note: this has different perspectives.)
- Recyclers aren't charging enough to cover costs for recycling
- Too many recyclers are exporting CRTs improperly
- Whenever the state manages CRT recycling, it seems issues of mismanagement increase
- Lack of knowledge about outlets for recycling CRTs
- Lack of engagement of glass manufacturers who made the glass
- Lack of adequate closure plans
- Ergonomic challenges of managing materials—physical wear and tear on people
- Costs are high to switch to new technologies
- Lack of clear specs for recycling grade material
- Need to ship trailer loads of CRTs/glass in order to be accepted
- Thin operating margins, insufficient funds held

TREATMENT AND DISPOSAL IN LANDFILL
(HAZARDOUS OR NON-HAZARDOUS)

+
- Large capacity likely

−
- State bans on landfilling CRTs
- Doesn't count toward state recycling obligations
- Cost
- Not environmentally-friendly
- Potential stigma issues

TREATMENT AND USE AS ALTERNATIVE DAILY COVER
AT MUNICIPAL SOLID WASTE LANDFILL

+
- Large capacity likely

−
- Doesn't count toward state recycling obligations
- ADC may be considered a form of recycling by some, which discourages other recycling options for CRT glass
  - (Note: Different perspectives on this point)
- State approval required for use as ADC
- Potential stigma issues

	ADVANTAGES +	CHALLENGES −
CERAMICS	• Substitute for raw material • Doesn't require energy to separate lead from glass • Large global capacity potentially available	• Would likely require export • May not be able to export to non-OECD countries • Shifts the lead to ceramics, which may create legacy issue • Proper firing required in order to minimize exposure • Needs regulatory certainty/acceptance • Real capacity unknown
GLASS FURNACES Uses electricity/plasma to separate lead from glass	• Smaller and regional in scale; could be co-located with large piles of glass • Multiple furnaces would lower freight costs • Lead recovered from CRT glass	• Very few in operation • High energy consumption; lifecycle assessment may be helpful • Needs longer timeframes to store glass • Small capacity • Permitting/regulatory issues • Disposition of slag
GLASS TO GLASS/CRT MANUFACTURING	• There is niche market for CRTs • CRTs are inexpensive and are more robust equipment for variable power situations	• New CRTs will eventually need recycling • Lack of engagement with the glass manufacturers in recycling options for CRTs • Declining market
CONCRETE	• Huge capacity • Regional markets	• Shifts the lead to concrete products, which may create legacy issue • Whether treatment process adequately prevents leaching • Permitting issues • Potential stigma issues

LEAD/COPPER SMELTER	• Existing process in operation
	• Regulated
	• Large capacity
	  ○ (Note: Different perspectives on this point)
		• Limited capacity and no growth potential
		  ○ (Note: Different perspectives on this point)
		• Lead recovery may not be very efficient
		• Disposition of slag
		• Air emissions
		• Variable commodity prices
		• Permitting of new smelters is difficult
		• Few smelters in North America accept CRT glass
		• Perception of taking in hazardous waste
		• Needs longer term storage of glass

CRT REUSE	• There is niche market for CRTs • CRTs are more robust equipment for variable power situations • Inexpensive compared to LCDs	• Low demand in US • Hard to export; exports can be abused as "sham reuse" • Wiring diagrams are needed to refurbish • Reused CRTs will eventually need recycling
RETRIEVABLE STORAGE	• Avoids irresponsible speculative accumulation • Allows material to be held until solutions appear • Quantify the amount of available feed stock or supply	• Funding needed/Need to devise a financial structure to account for recovery • May create a legacy issue • Competes with viable recovery technologies • Hazardous waste permit and regulations may apply • Seen as a "kick the can down the road" approach
CHEMICAL EXTRACTION	• Potentially environmentally friendly process • Complete recovery of lead	• Not operational commercially • Could be expensive • Potentially slow and time intensive • Limited capacity