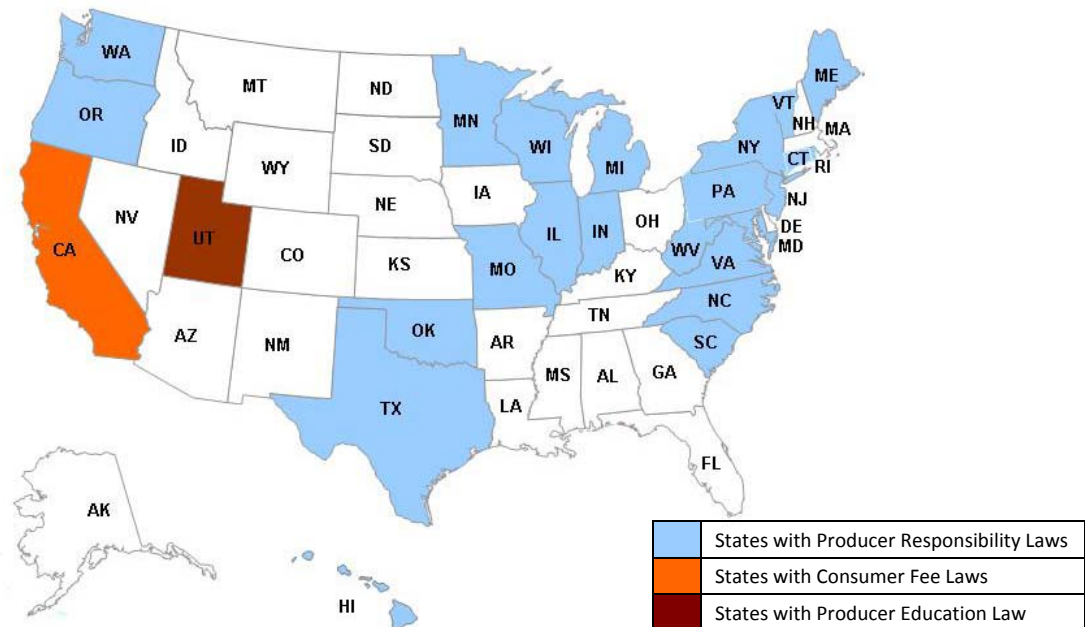


Ten Lessons Learned From State E-Waste Laws

What have we learned from the 25 states that have passed e-waste laws?



Twenty five states have passed laws that mandate recycling programs for electronic waste. Twenty three of the 25 laws use some form of the “producer responsibility” approach (whereby manufacturers have financial responsibility for recycling their old products), although they do this in a few different ways, and with different details.

What have we learned from these state laws? What approach works best?

While some of these state programs are still getting underway, we now have enough data from different states to draw some conclusions about what’s working best, and what elements should be included in state bills. Of course, we will learn more as the existing programs mature, and as other states launch new programs. But we can already glean some important lessons.

What results in high collection volumes?

Let’s start with the most basic question – are any of the state programs actually getting people to bring back their products for recycling? We have long heard the manufacturers complain, “We can’t go into their houses and make consumers give us their old products.” But some states are seeing very high volumes even in the first year of their programs. Why?

The states with the highest volumes of e-waste (on a per capita basis) are Minnesota, Washington, and Oregon. States with very low per capita collection volumes are TX, VA, OK and WV.

	State	Year	Total Lbs Collected	Pounds Per Person in State
Highest volumes	Oregon	2010	24,149,774	6.31
	Washington	2010	39,467,798	5.92
	Minnesota	2009-2010	33,082,679	6.37
Lowest volumes	Texas	2010	24,370,894	0.97
	Virginia	2010	4,439,446	0.56
	West Virginia	2009	1,646,155	0.51
	Oklahoma	2009	817,277	0.22

See a full list of all state programs and volumes collected starting on page 8.

The logical question is: What’s working in MN, WA, and OR, that’s not happening in the other states? Why are MN, WA, and OR collecting six times the volume of the others? Even if you “adjust” the data in these states to compare results on the same product categories (removing the data on TV’s collected in MN, WA, and OR since the TX, VA, and OK programs don’t collect TVs), the leading states numbers are still much higher.

We have learned several lessons from these state programs about collection volumes. The first six lessons below relate to collection volumes, and the remaining address other issues in the programs.

Lesson 1:

States see high collection volumes when laws either make the collection very convenient, or they establish collection goals

All of the states with good results have laws that either make the e-waste collection infrastructure very convenient, or they actually establish specific goals that manufacturers must meet.

Convenient Collection: In Washington and Oregon, the laws establish convenience requirements: there must be a collection site in every county and in every city over 10,000 people. In Washington, 92% of residents now have a convenient collection site within 10 miles of their home. (Source: Northwest Product Stewardship Council.)

Collection Goals: In Minnesota, the manufacturers have specific collection goals each year, which are tied to how much they sold in the state in the previous year. In Year 1, the goal was 60% by weight, rising to 80% by weight in Year 2. (Other states have adopted this model, but we don’t have data yet.) If the manufacturers collect less than their goals, they must pay a fairly high price per pound for each pound they fell short (a higher price than they’d pay by actually doing it).

Policy conclusion:

Bills should include some kind of driver for high collection – either convenience requirements or collection goals or a combination of both.

Lesson 2:

Some states with higher collection numbers have a variety of collector types because their laws cover collection costs.

States (like WA and OR) with some of the highest collection numbers also generally have a variety of types of collectors – municipal governments, private companies (includes recyclers, retailers), and non-profits. (They have a fairly small number of government collection sites.) Both of these state laws require the manufacturers to cover the costs of collecting e-waste as well as the cost of recycling it. The Washington law states that manufacturer plans must, “Fairly compensate collectors for providing collection services.” While some local governments in other states will do e-waste collection without being compensated (they use taxpayer funds to cover those costs), other collector types are unlikely to participate if the law doesn’t cover their collection costs.

Policy conclusion:

Bills should encourage diversity of collector types: government, private (recyclers, retailers), non-profits by covering the costs of collection

Lesson 3:

Most manufacturers will only do what the law requires them to do and not more

We have been disappointed to learn this lesson. But it’s becoming clear that if states don’t spell out clear convenience requirements or establish collection goals, most of the manufacturers won’t make any significant effort to collect used electronics. Texas, Oklahoma, Virginia, and Missouri passed laws that require the computer companies to operate takeback programs, but the laws don’t specify any particular level of performance. Companies are free to do whatever they want (including not doing much at all). We now have two years of data from Texas, analyzed by the Texas Campaign for the Environment (which they had to obtain by FOIA requests – another lesson here – put public reporting in the law). In Year 1 (2009), Dell was the only company that took the law seriously, collecting about 15 of the 18 million lbs collected statewide. In Year 2, the volumes increased, but still only a handful of companies, notably Dell, Samsung, Sony, and a small San Antonio company called Altex, collected 92% percent of the volume. Of the 78 companies selling computers in Texas in 2010, 36 of them collected zero pounds. Computer giant HP collected only 45,931 pounds. By comparison, Dell collected 10 million pounds.

Policy conclusion:

Bills should include clear and high expectations for performance, or your program will underperform.

Lesson 4:

Many manufacturers will stop collecting when they hit their goals, so goals should be high and set as minimums, not ceilings.

In the first year of Minnesota's program, we saw that once manufacturers hit their collection goals, they put the brakes on collecting. Many collectors over-collected e-waste there, thinking they could sell it to the manufacturers who would need it to meet their goals. But some were left holding onto those pounds, once manufacturers reached their marks and didn't want to go over. This was a problem for those collectors, but it was also a problem for consumers. Collection programs that were free (to consumers) as long as the manufacturers were paying for the collection would suddenly have to start charging collection fees once the manufacturers hit their goals. This is disruptive to these programs, and we know that for some consumers, if they must pay to recycle, they won't recycle.

Oregon's program was so successful in its first year that it became clear about half way through the year that companies were on track to exceed the statewide targets. One group of manufacturers put the brakes on their recycling efforts, dropping some recyclers from their program, and telling Goodwill to stop participating in some collection events. [See "Oregon's electronics recycling too successful for some manufacturers," [The Oregonian, May 12, 2009](#).]

Some states now allow manufacturers to accrue credit for "over-collecting" (beyond their goal), which can be sold to other companies, or which can be carried over to the following year (up to 25%).

Illinois is a good example of what happens if you set your goal too low. In Year 1 (2010), companies had to meet a goal of 2.5 pounds per person, and the idea was that the goal would slowly increase over time, based on the volumes collected. But the first year goal was not mandatory, and if it turned out that their actual collection numbers were below this level, then the goal would be reduced by up to 10%. This created a clear incentive for the companies to do little in Year 1, and in fact they did little – collecting only 2.12 lbs per person, despite having a very large scope of products covered for free recycling. Now, the Illinois bill sponsor is seeking to amend the law to set the goal higher.

Policy conclusion:

- **Set your collection goals high enough to generate real collection activity**
- **Don't link your initial goal setting to the manufacturers' collection activity (or inactivity) or you will start off with a very low goal**
- **Set minimum recycling goals, not goals that act as "ceilings"**
- **Because manufacturers will stop collection when they hit their goal, consider bills that combine both collection goals and convenience requirements. New York State did this, and it seems like a good solution to make sure there is ongoing collection year round. (Program began collecting in 2011, so no data yet.)**

Lesson 5:

Manufacturers will focus efforts on urban areas, not rural ones

This is an obvious one but it's worth mentioning. It costs less for manufacturers to collect e-waste in densely populated areas, than in rural ones. This is one reason why some states (WA, OR, NY) have included some convenience language that requires collection in every county. Minnesota used a different approach – they allowed manufacturers to earn extra credit (1.5 times) for products collected in their rural counties towards their annual goal.

Policy conclusion:

States with large rural areas need to include a strategy that (like convenience measures or rural collection credits) that will make sure that your rural constituents are not neglected.

Lesson 6:

Landfill bans boost recycling levels.

Many states laws enact landfill bans, sometimes to coincide with the beginning of their collection program, sometime phased in a year or two later. But States see a spike in volumes when the bans go into effect. Maine began its collection program in January of 2006, but the landfill ban didn't take effect until July 2006. In the first six months they collected 1,291,202 lbs, but in the six months after the landfill ban took effect they collected 2,869,372 lbs. Some of that increase may have been due to maturing of the program, but since it was largely based on an existing infrastructure, they believe that the landfill ban had a big impact.

Policy conclusion:

Include in your e-waste law a disposal ban that prevents e-waste from being discarded into the municipal waste stream (landfills or incinerators)

Lesson 7:

States need to be proactive to make sure e-waste is handled responsibly.

The recycling industry has a history of “bad actors” – companies who use various low-road strategies to manage the products they collect. Some export them to developing countries. Some have stockpiled e-waste in warehouses and then disappeared, leaving behind a toxic waste dump. Some send it to processors using prison labor (particularly the federal prison UNICOR program). Some basically dump it here in the U.S. (such as the collector that loaded computers from a university in Minnesota onto a barge on a lake and then sank it). Some processors are not stooping to those measures, but they run operations that are not as safe for their workers or the environment as they should be.

We don't have federal laws that adequately regulate this industry. Some states have created their own recycling standards that recyclers must adhere to. But for most states, this step is simply too challenging – particularly for verifying compliance. Fortunately we now have two new voluntary standards and certification programs that can help here: e-Stewards and R2. While we believe that e-Stewards is a far superior standard (the R2 standard still allows exporting to developing countries and use of prison labor), states want to provide options. States can, however, show a preference for the much higher e-Stewards standard.

Policy conclusion:

- **Include language in your bill that requires all processors and refurbishment vendors handling e-waste collected in your state programs to be certified to either the R2 or e-Stewards Standards, showing a preference for e-Stewards.**
- **Include language that forbids the use of prison labor for e-waste collected in your state program.**

Lesson 8:

We want to encourage reuse, but e-waste laws can inadvertently discourage reuse if we are not careful

The last thing we want to do is to create laws that discourage legitimate reuse of products here in the U.S. (We do not support exporting non-working or untested products to developing countries, as this is usually a cover for e-waste dumping.) But there are many entities – from large commercial recyclers to small, locally based non-profits – who will reuse and refurbish used equipment for resale or sometimes for placement in non-profits or needy communities. Lawmakers need to be sure that programs don't reward recycling units more than reusing them. (This is the situation in the California program, where recyclers are only reimbursed for units recycled, but not reused. So reusable units are mostly diverted for recycling.)

Illinois has created an incentive for reuse by awarding extra credit to manufacturers toward their goals for units reused instead of recycled. Washington awards a bonus for equipment collected through charities whose main role is reuse. Washington State's law initially inadvertently disadvantaged small reuse entities that do very "light" refurbishment and local resale by including them in the restriction that collectors doing refurbishment must register as processors. They later modified their law to exempt these small guys.

Policy conclusion:

Analyze your bill language to make sure reuse is not discouraged, and include language to award extra credit toward goals for units that are actually reused.

Lesson 9:

Consumers want to be able to bring back everything – including televisions and printers

State laws must specify the "scope of products" that can be returned for free recycling. The first states to pass e-waste laws specified very narrow scopes of products, typically just computers, monitors, laptops and sometimes TVs (but some didn't even include TVs). This was often because that's politically as much as they could get passed at the time. States passing bills more recently (like New York) have been able to establish much larger scopes of products, including a wide range of computer and television peripherals, as well as basic consumer devices. Anecdotal reports from collectors show that consumers want to be able to bring back all the used electronics they have, not just a few of them, especially the larger ones (like TVs and printers). People are more likely to use programs that allow them to bring back all the items they have ready for recycling or disposal. In some states, the highest proportion of e-waste coming back (by weight) is in televisions (over 60% in WA and OR). Some states have already gone back to the legislature to amend their laws to expand their scope of products. See our [list of which products are covered by each state law](#).

Policy conclusion:

- **Include a broad scope of products for free recycling.**
- **Since new products emerge all the time, use more general terms to describe these products.**
- **If possible, create an administrative procedure for adding to the scope of products, without going back to the legislature.**

Lesson 10:

Transparency and reporting helps us to understand better what's happening in the programs

Currently, most companies do not voluntarily report (publicly) the volumes they collect in each state. The companies will promise legislators that they will operate robust takeback programs, but the only way we will know how successful they are is if we get clear reporting by each company, available to the public. For instance, in Texas, the companies report their volumes to the State, but the Texas law does not require the State to make this collection information public, so the State does not do so. An NGO there must file a Freedom of Information Act (FOIA) request each year to get that information and release it publicly. And the 2009 and 2010 numbers revealed that companies were making vastly different levels of effort. In some states, the manufacturers lobby to get this information exempted from FOIA requests.

Because these programs are still fairly new, reporting is an important way for us to evaluate the effectiveness of the programs, and to compare the different approaches between states.

The State should put out a report at least annually (but quarterly is better) on the volumes that each manufacturer has collected.

In some states companies must submit plans for approval. In Washington, the plans are made public only after they are approved. So local residents, businesses, or governments have no opportunity to comment or make suggestions on the plans before they are approved.

Policy recommendation:

Include language that requires

- **quarterly reporting from manufacturers to the State on collection volumes, by category and not exempt from FOIA disclosures**
- **quarterly public reporting by the State on the volumes collected by manufacturers**
- **making manufacturer plans (if required) public – both when they are submitted (draft plans) and after they are approved**
- **manufacturers to hold a public meeting on their proposed plans or at least provide opportunities for comments, that the State could view in its approval process**

Find more information on state e-waste laws on our [website](#).

Last updated: May 10, 2011

How much e-waste is collected in states with electronics recycling laws?

Twenty five states have passed e-waste recycling laws, and all but two are based on “Producer Responsibility.” Many programs are only just getting started. Only a few states report breakdowns by product type. This chart is updated regularly as data becomes available.

☑ means the item is collected for free recycling but the state doesn’t provide collection data by category. (Figures in purple estimated or annualized.)

KEY to Other Products: C = Cell phone, CB = Converter box for TV, D = DVD player, DPF = Digital Picture Frames; F=Fax, G = Game console, K=Keyboard, M = Mouse, MP= MP3 player, S = Scanner, Sat = Satellite receiver or cable receiver, V= VCR

Last updated: Sept 26, 2011

State	Year	Monitors	TVs	Computers	Laptops	Printers	Other Products See key above	TOTAL LBs COLLECTED	Notes	# Reg. Mfgers	Population ¹	Disposal Ban Effective Date	# sites	People per site ²	Lbs per capita ³	
California	Year 1	2005	☑	☑	not covered	☑	not covered	64,809,498		None, Mfgers don't participate	35,795,255	In 2002 & 2006			1.81	
	Year 2	2006	☑	☑	not covered	☑	not covered	127,979,144			35,979,208					3.58
	Year 3	2007	☑	☑	not covered	☑	not covered	185,190,929	Portable DVD players with LCD screens added			36,226,122				5.17
	Year 4	2008	☑	☑	not covered	☑	not covered	216,062,581				36,580,371				5.91
	Year 5	2009	☑	☑	not covered	☑	not covered	167,876,682				36,961,664				4.54
	Year 6	2010	☑	☑	not covered	☑	not covered	172,570,839				37,253,956		580 collectors		4.63
Hawaii	Year 1	2010	☑	Not until 2011	☑	☑	☑	3,235,432	Only IT in 2010	49	1,360,301				2.38	
Illinois	Year 1	Jan-Jun '10	3,324,947	4,674,583	2,771,516	Reported under Computers	1,689,124	1,159,071	30,183,168		52	12,830,632	2012	144	89,102	2.35
			24%	34%	20%		12%	C,D,F, G, K, M, MP, S, V								
Maine	Year 1	2006	1,205,726	2,954,848	not covered	Laptops reported under "monitors"	not covered	4,160,574			1,317,308	7/20/06			3.16	
	Year 2	2007	1,393,775	3,290,682	not covered		not covered	4,688,552	4095 unk			1,314,963			3.57	
	Year 3	2008	1,421,399	3,853,020	not covered		not covered	5,274,419		Printers, DPF, Games added for 2010		1,319,691			4.00	
	Year 4	2009	2,145,256	5,767,036	not covered		not covered	7,912,292				1,318,301			6.00	
	Year 5	2010	1,203,511	3,935,723	not covered		198,895	158 games	5,338,287			1,328,361			4.02	
Maryland		2006	Was a pilot program with limited funding. Permanent program estab. eff. Oct 2007													
	Year 1	2007	Volumes reported are from municipal (mostly county) collection programs that go beyond products covered by law (computers and displays).						908,135	FY 07-08: Total includes 2.2 Million lbs pd by producers		5,634,242				0.16
	Year 2	2008	Manufacturer registration fees used as grants to reimburse some municipal costs (see box to right of total lbs.)						12,610,690			5,658,655				2.23
	Year 3	2009							17,393,976	FY 09-10: Total includes 9 million lbs paid for by producers,		5,699,478				3.05

State		Year	Monitors	TVs	Computers	Laptops	Printers	Other Products See key above	TOTAL LBS COLLECTED	Notes	# Reg. Mfgers	Population ¹	Disposal Ban Effective Date	# sites	People per site ²	Lbs per capita ³	
	Year 4	2010							17,042,374		60	5,773,552		30		2.95	
Minnesota	Year 1	2007 - 08	☑	☑	☑	☑	☑	Fax, DVD, K,	33,600,000		79	5,191,206	7/1/06			6.47	
	Year 2	2008 - 09	☑	☑	☑	☑	☑		30,293,194		72	5,230,567				5.84	
	Year 3	2009 - 10	☑	☑	☑	☑	☑		33,082,679		71	5,266,214				6.37	
	Year 4	2010							17,042,374		60	5,773,552		30		2.95	
North Carolina	Year 1	2010	☑	☑	☑	☑	☑ as of July 2010	K, M, S as of July 2010	9,148,000		78	9,535,483	7/1/2011			.096	
Oklahoma	Year 1	2009	☑	not covered	☑	☑	not covered		817,277			3,687,050	No ban			0.22	
	Year 2	2010	☑	not covered	☑	☑	not covered		2,554,632		36	3,751,351				1.47	
Oregon	Year 1	2009	6,144,774	10,817,023	2,031,941	Reported under computer	not covered		18,993,738			3,825,657				4.96	
		%	32.40%	57.00%	10.70%		not covered										
	Year 2	2010	6,520,439	14,972,860	2,897,973		not covered		24,149,774			3,825,657	1/1/2010	264	14,491	6.31	
	%	27.0%	62.0%	12.0%	not covered												
Rhode Island	Year 1	2009	☑	☑	☑	☑	not covered		2,823,369		46	1,053,209	1/1/08			2.68	
	Year 2	2010	☑	☑	☑	☑	not covered		Not available			1,052,567					
Texas	Year 1	2009	☑	not covered	☑	☑	not covered		15,247,207			24,782,302				0.62	
	Year 2	2010	☑	not covered	☑	☑	not covered		24,370,894			25,145,561				0.97	
Virginia	Year 1 partial	Jul - Dec 2009	☑	not covered	☑	☑	not covered		3,782,500	Actual 2Qs	37	7,882,590				0.96	
							not covered		7,565,000 ⁴	Annualized		(6 mos x 2)					
	Year 2	2010	☑		☑	☑	not covered		4,439,446 ⁵			7,882,590				0.56	
Washington	Year 1	2009	12,287,734	22,350,612	3,910,328	Reported under computer	not covered		38,548,674			6,664,195				5.78	
		%	31.90%	58.00%	10.10%		not covered							NA ⁶			
	Year 2	2010	10,738,240	24,969,639	3,759,919		not covered		39,467,798			6,664,195		280	23,801	5.92	
	%	27.20%	63.30%	9.50%	not covered												
West Virginia	Year 1	2009-10	Counties run programs partly funded by producer fees. Some producers operate own programs.				921,270 lb by counties 2009	724,435 lbs by mfgers 2009	1,646,155	For 2009 Prelim data.			1,819,777	1/1/2011			0.51
			☑	☑	☑	☑	not covered										
Year 2	2010-11	☑	☑	☑	☑	not covered			No data yet.								
Wisconsin	Year 1	Jan - Jun 2010	☑	☑	☑	☑	☑	D, F, K, M, V	10,328,779	Only 6 months	69	5,686,986	9/1/10	329	17,286	3.63	
	Year 2	Jul 2010 - June 2011	☑	☑	☑	☑	☑	D, F, K, M, V	35,470,000	First full year	82	5,686,986		400	14,217	6.24	
Other States Which Began Collection in 2010 or scheduled to begin collection in 2011 or later. (No data available yet)																	
Connecticut	Year 1	2011	☑	☑	☑	☑	☑			Data in 2012	60	3,518,288	1/1/2011	123	28,604		

State		Year	Monitors	TVs	Computers	Laptops	Printers	Other Products See key above	TOTAL LBs COLLECTED	Notes	# Reg. Mfgers	Population ¹	Disposal Ban Effective Date	# sites	People per site ²	Lbs per capita ³
Indiana	Year 1	Apr 2010 – Mar 2011	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	not covered	F, K, DVD, V		Later in 2011			1/1/2011			
Michigan	Year 1	Apr 2010 – Mar 2011	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Added in year 2			Later in 2011	27					
Missouri	Year	2010-11	<input checked="" type="checkbox"/>	not covered	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	not covered			Later in 2011						
New Jersey	Year 1	2011	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	not covered			Data in 2012			1/1/2011			
New York	Year 1	Apr 2011 – Mar 2012	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	C, CB, D, F, G, K, M, MP, S, Sat, V		Data in 2012			4/1/11 and 1/1/12			
Pennsylvania	Year 1	2012	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	K		Data in 2013			1/1/2013			
South Carolina	Year 1	July 2011- Jun 2012	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			Data in 2012			7/1/2011			
Vermont	Year 1	July 2011 – Jun 2012	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	K, M		Data in 2012			1/1/2011			

Comparing data between the states.

To make fair comparisons, it's important to know that these programs are not all accepting the same products, and some collect from more than just households. (See whose products are covered on our [chart summarizing laws](#).) For instance, the California program accepts e-waste from all entities – business, consumers, etc. CA experts estimate that at least half the volume there comes from business. So those numbers should be expected to be higher than states that are only collecting from residents.

For more information on state laws: <http://www.electronicstakeback.com/promote-good-laws/state-legislation/>

¹ Population stats through 2009 from US Census annual July estimates: <http://www.census.gov/popest/states/NST-ann-est.html> .
2010 Census data: <http://2010.census.gov/2010census/data/>
2011 Census information not yet available.

² We divide total population by the number of regular collection sites (meaning those operating year round). Of course, one would need to look at the location of the sites to assess whether all areas of the state are covered, but this statistic provides a very general metric for comparing the number of sites offered between states.

³ Pounds per capita (pounds per person in the state) is used to compare collection volumes between states with different populations.

⁴ Program went into effect mid-year, so manufacturers were required to report only July – Dec 2009 collection totals. Because this was only 6 months of collection, we multiplied the volumes time 2 to estimate an annual amount (for comparison's sake). However, according to the Virginia Dept of Environmental Quality, some companies reported annual totals in their 2009 numbers. So our annualized 2009 number was likely overstated.

⁵ According to the VA DEQ, some companies have still not reported their 2010 numbers. We will revise this total, if these manufacturers report any volumes.

⁶ Washington did not include a statewide disposal ban in its law, but some counties have established disposal bans (including King County).