

Western States Electronics Stewardship – A Comparison

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This document briefly compares the electronic waste collection and recycling programs of five selected Western states. The four main tables offer a snapshot of what each program offers, some performance metrics, how these laws correspond to Responsible Recycler criteria, and what devices are covered or excluded under their programs. These tables offer a simplified comparison of summarized information, identifying gaps where they exist. Readers who wish to know more should consult the original sources. Please review the accompanying Appendix for a definition of terms, an explanation of the methodology used to derive the comparisons, and source links.

1. State Program Summary

State	Start Year	Financing System	Who Pays	Collection	Recycling	Reuse
CA	2005	ARF	Consumer	Yes	Yes	No
HI	2010	EPR	Manufacturer	Yes	Yes	No
WA	2009	EPR	Manufacturer	Yes	Yes	Yes*
	*Reuse exemptions for functional electronics collected					
OR	2009	EPR	Manufacturer	Yes	Yes	Yes*
	*Reuse/refurbishment exemptions for collected devices					
TX	2007	EPR	Manufacturer	Yes	Yes	(No*)
	*Reused equipment numbers collected from manufacturers					

2. State Program Performance Metrics

State	Pounds Collected per Person per Year	Cost/lbs collected (in-program)	Cost/lbs collected (other)	Jobs Created (Public/Private)	Diversion Growth (program only)
CA	At least 5.02*	\$0.39	\$0.50-\$0.75	Not Reported (55#); +5.5% in businesses	+187% from 2005-09.*
	#June 07 CIWMB report. *Amended collection and Diversion growth using data provided by CalRecycle				
HI	Data Not Yet Available	Data Not yet Available*	\$0.50-0.60	Not Reported (12 known collectors)	Data Not Yet Available
	*Annual registration fees \$2500 (TV), \$5000 (CED), insufficient data to calculate on collected weight basis.				
WA	5.8-5.89	\$0.24*	\$0.25-\$0.50	Not Reported; 79#	+2% from 2009-10.^
	*2009-2010 administrative costs were \$0.009/pound. #2010 NWPSC report				
	^Averaged 12 month-year from 10 months of actual data show slight increase.				
OR	5.6-6.0	\$0.24*	\$0.35-0.50	Not Reported; 61#	+6% from 2010-2011
	*WMMFA 2009. 2010 Annual registration fee divided by collected weight that year = \$0.015/lb. #2010 NWPSC report				
TX	0.62	No Data	No Data	Not Reported	No Data

3. Responsible Recycler Criteria

State	Downstream Due Diligence	Reuse: Function Test	Tracking	Data Purge	Liability Insurance	Export	Labor	ISO 14001	2 nd Party	3 rd Party
CA	Not Required	Not Required	Annual Report (detailed)	Not Req	FA provision	Notify DTSC	No Additional	Not Req	SB20/50 "approved"	Not Req
HI	Not Required	Not Required	Annual Report	Not Req	No Additional	No	No Additional	Not Req	Registration	Not Req*
*HI explicitly cites ISRI standards in law										
WA	Fate reported*	No Additional	Return Share	Not Req	FA provision	Explicit limit, Fate Report	Prison labor prohibited	WA's WAC*	Registration	Not Req
*WA annual report traces fate of material through final recycler to final destination. *WAC 173-900-650 Standards										
OR	Not Req/EMP	Not Required	Return Share	NR/EMP	FA provision	No	No Additional	OR's EMP	No	Not Req
TX	Not Required	Not Required	Annual Report	Not Req	No	No	No Additional	Not Req	No	Not Req*
*TX explicitly cites ISRI standards in law										

4. Device Table

State	Law	C R T	L C D	Plasma	LED (TV)	C P U	Lap top	Printer	Scanners	Network	Mobiles	Games	Med & Lab Equip
CA	SB20/50	Y	Y	Yes	Yes	N	Yes	No	No	No	(No*)	No	No
*CA's AB2901 covers cell phone recycling.													
HI	EWTRR	Y	Y	Yes	Yes	Y	Yes	Yes	No	No	(No)	No	No
WA	SB6428	Y	Y	Yes	Yes	Y	Yes	No	No	No	No	No	No
OR	HB2626	Y	Y	Yes	Yes	Y	Yes	No	No	No	No	No	No
TX	HB2714	Y	Y	No	No	Y	Yes	No	No	No	No	No	No
TX law does not include televisions. Keyboard and mouse collection/recycling are included.													

Appendix: Western States Electronics Stewardship Comparison

Definitions

Table 1: State Program Descriptions

- State: CA, HI, WA, OR, TX are California, Hawaii, Washington, Oregon, and Texas respectively.
- Start Year: The year that state's program became implemented, not the enactment date.
- Financing System: Identifies the form of cost-internalization that state program uses (ARF is Advanced Recycling Fee, EPR is Extended Producer Responsibility).
- Who Pays: Identifies what party, if any, is responsible for paying the state program's financing system. Most states in the five selected have an annual registration fee, which varies widely.
- Collection: the state's law/program defines boundaries, roles, expectations for collection of e-waste. This can include mail-back only collection methods.
- Recycling: the state's law/program defines boundaries, roles, expectations for the recycling of e-waste.
- Reuse: the state's law/program defines boundaries, roles, expectation for the reuse of e-waste.

Table 2: State Program Performance Metrics

- State: CA, HI, WA, OR, TX are California, Hawaii, Washington, Oregon, and Texas respectively.
- Pounds Collected Per Person Per Year: Lbs of e-waste collected through the program legislated by the state in a reported year, divided by the US Census-derived population for that state that year. Texas data derived from May 2010 *Making TakeBack Work in Texas* report.
- Cost/lbs collected (in-program): The cost of administration, collection, recycling, processing, and logistics, per pound, for electronic devices in the state's program. "R" indicates registration cost only.
- Cost/lbs collected (other): The price range per pound, for collecting & recycling electronic devices excluded from the program legislated by the state.
- Jobs Created: Accounting of numbers of jobs (public or private) directly attributed to the e-waste law and program within the state.
- Diversion Growth (program only): The percentage change of e-waste collected & recycled (by weight) in the program legislated by the state from its start year to the latest operating year with data. This column *does not* compare the volume of e-waste collected and recycled against the overall amount of solid and hazardous waste generated that year.

Table 3: Responsible Recycler Criteria

- State: CA, HI, WA, OR, TX are California, Hawaii, Washington, Oregon, and Texas respectively.

- Downstream Due Diligence: Describes if any part of the state’s law explicitly requires due diligence of the downstream recyclers beyond the first two transaction points of consumer-collector, and collector-recycler.
- Reuse: Function Test: Describes if any part of the state’s law requires function testing of collected electronic devices or their components with the intended purpose of reuse/refurbishment.
- Tracking: Describes the method by which the state tracks performance.
- Data Purge: Describes if the state law has any requirements for data protection/destruction.
- Liability Insurance: Describes if the state law has any explicit requirements for additional liability insurance or financial assurance (FA).
- Export: Describes if the state law has any explicit (international) export requirements. “No” signifies no additional export requirements.
- Labor: Describes if the state law has any explicit additional labor standards or prohibitions.
- ISO 14001: Describes if the state law has either a specific ISO14001 or another Environmental Management System requirement for e-waste processors in their state program.
- 2nd Party: Describes type of relationship between an e-waste processor and the state oversight body. “Approval,” “Registration,” and “None” are the options for these 5 states. No state “certifies” e-waste processors in their program.
- 3rd Party: Describes whether state has any requirements for 3rd Party certification for e-waste processors.

Table 4: Device Table

- State: CA, HI, WA, OR, TX are California, Hawaii, Washington, Oregon, and Texas respectively.
- Law: Cites the state’s law that is being compared in this document
- CRT: Cathode-Ray Tube (monitors and televisions)
- LCD: Liquid Crystal Display (monitors and televisions)
- Plasma: Plasma screen television
- LED: Light-Emitting Diode (television)
- CPU: Central Processing Unit (desktop computer variety)
- Laptop: Portable computer, including Netbooks. Excludes Smartphones, Blackberries, and E-Book readers like the Kindle device.
- Printer: Common consumer devices for printing digital information onto paper. Excludes high-volume commercial printers and photocopiers.
- Scanners: Handheld and desktop devices for digitizing an image. Including commercial machines.
- Network: All types of household networking devices, such as WiFi boxes.
- Mobiles: All types of mobile telephone device, including heavy computation-enabled Smartphones and Blackberries. Excludes scientific and other electronic calculators.

- Games: All types of purpose-built gaming platforms, from disc-playing to networked technologies, such as those sold by Sony, Sega, Nintendo, Xbox/Microsoft. Excluding optimized desktop and laptop computers for gaming uses, such as Alienware.
- Med & Lab Equip: Medical and laboratory equipment. All the electronic precision measuring and monitoring equipment typically found from medical and laboratory facilities.

Methodology

Table 1: State Program Descriptions

- Consumer/Manufacturer/None selected from the law's text
- Yes/No determined by explicit requirements cited in state law.

Table 2: State Program Performance Metrics

- Pounds collected per person per year cite either the number reported in the July 2010 GAO report, or are derived from state reports from the latest operating year, divided by state population for that year. Texas cites the May 2010 *Making TakeBack Work in Texas* report.
- In-Program Costs cite the July 2010 GAO report or note only the Registration ("R") cost divided by the total weight of waste collected reported by the state in the latest operating year (if available). This method may not reveal total in-program recycling costs, and are therefore noted with an "R" as a Registration cost alone, and are an incomplete comparison.
- Other Costs are the range of price per pound quotations gathered randomly from listed electronics collectors/recyclers in that state for devices typically excluded from the state program, such as a printer.
- Jobs numbers aren't collected under these laws.
 - California: The 2005-2006 CIWMB Annual Report cites 561 approved collectors and recyclers in California's program. This leads to a result of 5.5% growth in numbers of those businesses in the program by 2010. This is a raw *indicator for jobs*.
 - The June 2007 CIWMB report (pg 62) cites 55 jobs created at the Board of Equalization to manage California's fee program.
 - A preliminary comparison between numbers of 'viable processors' (493) identified in the November 2001 analysis and the number of "approved" collectors and recyclers (592) in September 2010 suggests 20% growth in numbers of businesses.
 - 609 businesses in the state collect TVs & monitors including SB20/50 participants. = 23.5% growth against 2001 baseline.
 - 639 businesses in the state collect all kinds of electronics including SB20/50 participants. = 29.6% growth against 2001 baseline.
 - These numbers offer high confidence that SB20/50 program is responsible for increasing the growth of e-waste recycling business in California.
 - Hawaii: 12 collector/recyclers are listed for the entire state.
 - Oregon & Washington: A February 2010 NWPSC report estimated — "According to interviews of processors/ recyclers, approximately 140 net new jobs were created across Washington and Oregon for program start-up: 79 in Washington and 61 in Oregon. Approximately 360 ongoing jobs at these facilities are reported attributable to the Washington and/or Oregon E-Cycle programs."

- **Diversion Growth**
 - California: CalRecycle provided annual data for collected covered electronic waste (CEW) from their Net Cost Reports. In 2005 (baseline), California’s program collected 64.8 million pounds of covered electronic waste, peaking in 2008 at 218 million pounds, with 2009 reporting 186 million pounds. Between 2005 and 2009, covered e-waste collection grew 187%.
 - Washington: 2009’s report has 12 months of data. 2010’s report has 10 months of data. Comparing raw weight collected between the two existing data point shows a 32% decline in e-waste collected. Taking a monthly average for collected e-waste shows a 2% increase in e-waste collected.
 - Oregon: The 2011 Return Shares report uses previous-year collected numbers, and is not a projection. Oregon expects 2010 to surpass 2009, and increase diversion beyond the 6% reported. Comparing 2009 and 2010 numbers (2008 and 2009 performance years), diversion grew 12.3%.

Table 3: Responsible Recycler Criteria

- If any part of the state law materially addresses the criterion in the Responsible Recycler Best Practices, it’s noted. Otherwise, “No,” “Not Required,” and “No Additional” indicate that this specific state e-waste law & program does not address the criterion.
- Hawaii’s specific legal citation with respect to 3rd Party certification is:
 - **[§339D-26] Environmental management.** (a) All covered televisions recovered pursuant to this part shall be recycled in a manner that complies with all applicable federal, state, and county laws and requirements. (b) The department shall adopt by reference the Institute of Scrap Recycling Industries, Inc.'s Electronics Recycling Operating Practices as requirements.

Table 4: Device Table

- Technology Change: This document is a snapshot in time, and does not cover every technology now on the market (such as TV projectors or “E-Book” devices), or what may become available in time, or how state programs are responding to these developments.
- Excluded Devices: Digital Television Converter Boxes, Cable Boxes, All Satellite technology (dish, decoder box, television, internet, telephone), appliances (including microwave ovens), programmable control units (for irrigation and heating/cooling), utility meters.

Web Links

California Links

- E-Waste Program: <http://www.dtsc.ca.gov/HazardousWaste/ewaste/index.cfm>
- 2008 Accomplishments: <http://www.calrecycle.ca.gov/Archive/IWMBAR/2008/Accomplish.htm>
- 2001 Analysis: <http://www.calrecycle.ca.gov/Publications/default.asp?pubid=933>
- 2009 Extended Producer Responsibility Report: <http://www.calrecycle.ca.gov/publications/Reduce/2009002.pdf>
- AB2901 (Cellphones): http://www.leginfo.ca.gov/pub/03-04/bill/asm/ab_2901-2950/ab_2901_bill_20040929_chaptered.html
- SB20/50 Recyclers search: <http://www.calrecycle.ca.gov/Electronics/Collection/RecyclerSearch.aspx>
- All e-waste collector/recycler search: <http://www.ecycle.org/search.asp>
- June 2007 CIWMB report: [http://www.calpsc.org/policies/docs/thru2008/Framework for EOL Products CIWMB June2007.pdf](http://www.calpsc.org/policies/docs/thru2008/Framework%20for%20EOL%20Products%20CIWMB%20June2007.pdf)
- Net Cost Report analyses: <http://www.calrecycle.ca.gov/Publications/default.asp?cat=24>
- CalRecycle Contact: ewaste@calrecycle.ca.gov

Hawaii Links

- State Law: <http://hawaii.gov/health/environmental/waste/sw/hedrp/hedrp.html>
- List of recyclers: http://hawaii.gov/health/environmental/waste/sw/hedrp/PDF_Documents/EwasteRecyclersAug2010.pdf

Washington Links

- State Law: <http://www.leg.wa.gov/pub/billinfo/2005-06/Pdf/Bills/Session%20Law%202006/6428-S.SL.pdf>
- 2009 Results: <http://www.ecy.wa.gov/programs/swfa/eproductrecycle/docs/2009TotalCEPPoundsWA.pdf>
- 2010 Results: <http://www.ecy.wa.gov/programs/swfa/eproductrecycle/docs/Collections.pdf>
- 2010 Tier: <http://www.ecy.wa.gov/programs/swfa/eproductrecycle/Tier2010.html>
- 2011 Tier: <http://www.ecy.wa.gov/programs/swfa/eproductrecycle/Tier2011.html>
- Recycler Search: <http://1800recycle.wa.gov/>
- Performance Standards for Direct Processors (WAC 173-900-650): <http://apps.leg.wa.gov/wac/default.aspx?cite=173-900-650>
- Additional Voluntary Standards for Direct Processors (2007): <http://www.ecy.wa.gov/programs/swfa/eproductrecycle/docs/PreferredPerformanceStdsFinal2007.pdf>

Oregon Links

- State Law: <http://www.leg.state.or.us/07reg/asures/hb2600.dir/hb2626.en.html>
- 2011 Return Share: <http://www.deq.state.or.us/lq/pubs/docs/ORECyclesReturnShare2011.pdf>
- 2010 Return Share: <http://www.deq.state.or.us/lq/pubs/docs/ORECyclesReturnShare2010.pdf>
- 2010 Tier: <http://www.deq.state.or.us/lq/pubs/docs/ORECyclesTierAssignments2010.pdf>
- Recycler Search: <http://www.deq.state.or.us/ecsearch/Default.aspx>

Texas Links

- State Law: <http://www.capitol.state.tx.us/tlodocs/80R/billtext/html/HB02714F.htm>
- *Making TakeBack Work* report: http://www.texasenvironment.org/ewaste_reports.cfm

Additional Links

- July 2010 GAO Report: <http://www.gao.gov/new.items/d10626.pdf>
- National Compilation of State Laws: <http://www.ecycleclearinghouse.org/>
- US Census data set: <http://www.census.gov/popest/states/tables/NST-EST2009-01.csv>
- ISRI Standard: http://www.isri.org/iMIS15_prod/ISRI/default.aspx
- R2 Best Practices: <http://www.epa.gov/osw/conserva/materials/ecycling/r2practices.htm>
- NWPSC Feb 2010 Report:
<http://www.productstewardship.net/PDFs/productsElectronicsEcycleWAORReport.pdf>