

E-Waste and the Environment

The Case for Electronics Recycling Legislation

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White Paper

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Abstract

Although many countries, including those in the European Union, have developed laws to address electronic waste (or e-waste) disposal and management, there is no federal law that addresses e-waste in the United States. Instead, many states have developed e-waste laws that range in scope to address the problem. Several Goodwill associations have been engaged in legislative efforts at the state level, and Goodwill Industries International's public policy team remains committed to supporting these efforts.

This paper reviews the problem of e-waste in the United States, outlines what is currently being done about the problem, and provides recommendations for moving forward on this issue on the local, state and federal levels.

This paper also provides an overview of Goodwill's partnership with Dell called the Reconnect program, which has recycled over 97 million pounds of electronic waste since its inception in 2004.

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Table of Contents

Executive Summary	4
Scope of the Problem.....	5
Responses to the Problem.....	8
Europe	8
U.S. Response.....	9
State Responses	10
Producer Responsibility Model.....	14
Minnesota Model	14
Texas Model.....	15
Advanced Recovery Fee Model.....	16
California Model.....	16
Goodwill's Response.....	17
National Perspective.....	17
Local Perspective	17
Green Jobs	19
Local Goodwill Agency Profiles.....	19
Goodwill Industries of San Francisco, San Mateo and Marin Counties (CA).....	19
Goodwill Industries of Central Texas (Austin)	20
Recommendations	21
Exports.....	21
Landfill Bans	21
Televisions.....	22
Annual Goals for Manufacturers	22
Refurbishing.....	23
Fees.....	23
Restricting Collections to State Residents.....	24
Green Jobs	24
Conclusion.....	25

Executive Summary

Each year, Goodwill® diverts more than one billion pounds¹ of clothing and textiles every year from landfills by recovering the value in people’s unwanted material goods and process numerous products that may or may not be adequate for resale. Often, Goodwill agencies® will receive electronics, including computers and computer peripherals, televisions, stereos, DVD players and VCRs, video game consoles, digital cameras and camcorders, cell phones, and more, that vary in functionality and are simply outdated or damaged beyond repair.



When it receives these unusable products, Goodwill must properly dispose of them — many of which include heavy metals such as lead, mercury and cadmium, and other environmentally sensitive substances. Some state laws require that a disposal fee or “tipping fee” for proper handling and disposal to be paid through a waste management agency. In other words, Goodwill agencies that receive unsalvageable donated electronic items must pay a collector or take the electronic items directly to a disposal site and pay a fee to properly discard them. Unfortunately for some local Goodwill agencies, the disposal fee in either case is a cost they simply cannot afford, so they stop accepting electronics at their donation centers. Often, however, electronics are still left at those donation centers after hours, leaving the Goodwill to dispose of the items.

When Goodwill pays fees to dispose of unwanted electronics, that money is diverted away from support of its mission — which is to provide job training, employment placement services and supportive services to people who have disabilities, lack education or job experience, or face other employment challenges. In 2009, Goodwill helped more than 1.9 million people through these community-based services. In addition to the obvious implications electronic waste has on the environment, solutions that prevent unwanted electronics from being put into landfills can help Goodwill to fully fund its programs in support of people in communities nationwide.

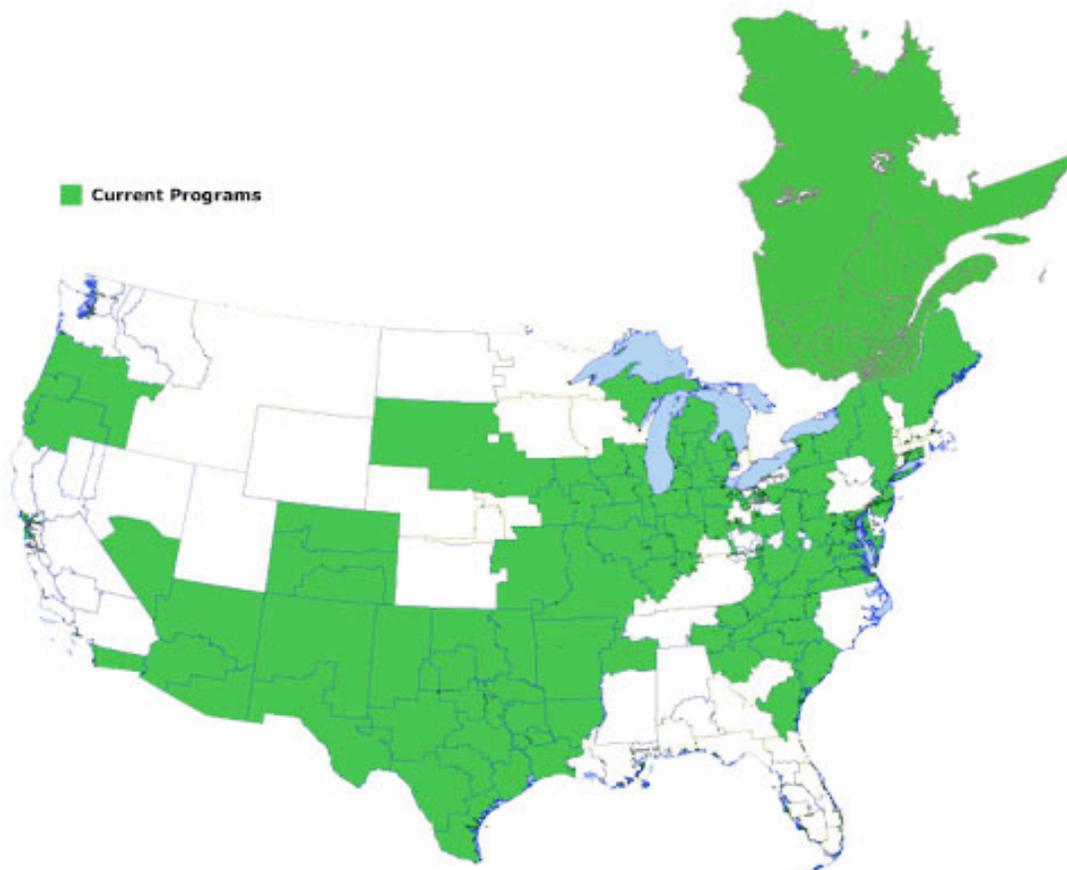
Although many countries, including those in the European Union, have developed laws to address e-waste disposal and management, there is no federal law that addresses e-waste in the United States. Instead, many states have developed e-waste laws that range in scope to address the problem. Several Goodwill associations have been engaged in legislative efforts at the state level, and Goodwill Industries International’s (GII’s) public policy team remains committed to supporting these efforts.

¹ Annual Statistical Report (2008 data), Goodwill Industries International



In 2004, Goodwill Industries International formed a partnership with Dell to create a program that would allow local Goodwill agencies to responsibly dispose of unwanted electronic products without diverting resources from their mission services. Through this partnership, known as Reconnect, participating Goodwill agencies collect unwanted computer components — ranging from monitors and mice to keyboards and scanners. Any unsalvageable equipment is sent to Dell's authorized environmental partners for responsible recycling. In exchange for providing a convenient option for consumers to dispose of their unwanted computer equipment, participating Goodwill agencies are compensated by Dell based upon the total weight of the electronic items recycled.

As of April 2010, 99 of the 166 local Goodwill agencies in the United States and Canada participate in Reconnect, providing more than 2,000 donation and waste collection locations across North America. New sites are being added as the program continues to expand.



Scope of the Problem

Spurred by the production of cheaper electronics, rapidly advancing technology, and the emergence of popular electronic gadgets, the consumption of electronics is dramatically increasing, while the lifespan of electronics is becoming relatively short. The Environmental Protection Agency (EPA) estimates that American consumers purchased electronics in the following numbers from 1984 through 2007.²

	2007 ³	2004	1994	1984
Desktops	34.2 million	47.5 million	20.9 million	8.2 million
Laptops	30.0 million	12.4 million	1.4 million	N.E
Televisions	28.6 million	46.9 million	26.6 million	24.2 million
Cell phones	181.9 million	116.2 million	N.E	N.E

In the past, many electronic products were designed in a way that it made financial sense to repair them when they broke. Today, it is often cheaper to discard malfunctioning consumer electronics and replace them with newer and more technically advanced products. The EPA estimates the following short life spans for these products.⁴

- Desktop computer: 2 – 4 years
- Laptop computer: 2–3 years
- Cell phone: 1–3 years
- Television: 7–13 years for a television

Although new technology has made it more affordable to replace electronic devices instead of repairing them, the question remains as to what should be done with the growing number of electronic items (computers and computer peripherals, televisions, stereos, DVD players and VCRs, video game consoles, digital cameras and camcorders, cell phones, and more) that are quickly making their way from store shelves into landfills at an alarming and accelerating rate.

² *Management of Electronic Waste in the United States: Approach Two*. U.S. Environmental Protection Agency, April 2007. Washington, DC. Exhibit 3.2.

³ *Electronics Waste Management in the United States: Approach One*. U.S. Environmental Protection Agency, July 2008. Washington, DC. Tables 2.1 & 2.2

⁴ *Management of Electronic Waste in the United States: Approach Two*. U.S. Environmental Protection Agency, April 2007. Washington, DC. Exhibit 3.7.

These old, tarnished, unwanted electronics, often referred to as “e-waste,” are exported abroad, often to developing countries where labor and environmental laws tend to be less restrictive and loosely enforced. E-waste recycling and disposal operations found in developing countries are more likely to use methods that are harmful to the environment, such as burning uncontained plastic waste; dumping acid into rivers and water supplies; and general widespread dumping. These methods not only pollute the environment, they damage human health by exposing people to toxins.



In the United States, unwanted used electronics amounted to approximately 1.9 to 2.2 million tons in 2005. Of that, about 1.5 to 1.8 million tons were primarily disposed of in landfills, and only 345,000 to 379,000 tons were recycled. Additionally, the EPA estimates that the following quantities of electronics were dumped in landfills in 2005.⁵

- 14.2 million desktop computers, totaling 186.5 million tons
- 4.4 million laptop computers, totaling 22.1 million tons
- 55.4 million cell phones, totaling 9.2 million tons
- 22.2 million televisions, totaling 751.4 million tons

In addition to concerns that electronic waste is taking up an increasing amount of space in U.S. landfills, electronic equipment contains toxic substances that can have serious environmental and public health implications if they are not disposed of properly. An estimated 70 percent of the heavy metals (lead,⁶ mercury⁷ and cadmium⁸) found in landfills come from discarded electronics.⁹ These heavy metals and other environmentally sensitive substances can leach into the ground, causing water contamination and other public health and environmental risks. Cathode ray tubes (CRTs) — the glass picture tubes that are contained in computer monitors and televisions — contain approximately four to eight pounds of lead per unit.¹⁰ Other environmentally sensitive substances include hexavalent chromium (chromium VI),¹¹ polyvinyl chloride (PVC),^{12 13} and brominated flame retardants.^{14 15}

⁵ *Management of Electronic Waste in the United States: Approach Two*. U.S. Environmental Protection Agency, April 2007. Washington, DC. Exhibits 4-2. and 4-3.

⁶ Known to cause damage to the central and peripheral nervous systems, blood system and kidneys.

⁷ Known to cause chronic damage to the brain.

⁸ Classified as toxin with a possible risk of irreversible effects on human health.

⁹ *Computers, E-Waste, and Product Stewardship: Is California Ready for the Challenge?* Report for the U.S. Environmental Protection Agency, May 11, 2001. Region IX, page 13.

¹⁰ Electronic Industries Alliance http://www.premierinc.com/quality-safety/tools-services/safety/topics/computers/downloads/k_3_lead_in_crts.pdf

¹¹ Causes strong allergic reactions, including asthmatic bronchitis. May also cause DNA damage.

¹² *Electrical and electronic waste: a global environmental problem: Explanatory Memorandum*. July 1999, Brussels, 05.07.1999

¹³ Used as a fire retardant, once alight, fumes from PVC can be a major contributor to fatalities.

Incinerating and smelting is not a viable alternative for dealing with e-waste, as doing so creates toxic by-products that contaminate the air. For example, incinerating flame retardants and most plastics used in electronic products creates dioxins that pose severe health threats.¹⁶ “Incineration can also result in high concentrations of metals, including heavy metals, in the slag, in the fly ash, in the flue gas and in the filter cake.”¹⁷ The toxic fallout from open-air burning, occurring often in parts of Asia, is even more dangerous. The effects from this practice “is affecting both the local environment as well as global air currents, depositing the highly toxic by-products in many places throughout the world.”¹⁸

Responses to the Problem

In response to mounting concerns, many European countries banned e-waste from their landfills in the 1990s. In February 2003, the European Community adopted two directives, 2002/95/EC and 2002/96/EC, which together impose further restrictions and requirements relating to the production and disposal of electronic products. In February 2006, China enacted similar legislation, called “China RoHS.”

Europe

On February 13, 2003, the European Union enacted two directives to respond to e-waste. The Waste Electrical and Electronic Equipment Directive’s (WEEE Directive’s) intent is to prevent electronic waste by promoting the reuse and recycling of electronic products, and compelling electronics manufacturers — including those that import products into member states — to establish an infrastructure for collecting WEEE in such a way that “users of electrical and electronic equipment from private households should have the possibility of returning WEEE at least free of charge.”¹⁹ The WEEE Directive requires all European Union member states to enact their own WEEE laws, a process that has led to the emergence of a patchwork of WEEE requirements throughout Europe.

Effective July 1, 2006, the Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, commonly referred to as the Restriction of Hazardous Substances Directive (RoHS Directive), requires “member states” to enact laws that restrict the use of six environmentally sensitive materials

¹⁴ *Poison PCs and Toxic TVs - E-waste Tsunami to Roll Across US: Are We Prepared?* Computer Takeback Campaign, February 2004. Page 13.

¹⁵ May cause increased risk of cancer of the digestive and lymph systems.

¹⁶ *Evidence mounts on risks of brominated flame retardants.* ENDS report 283. August 1998, London, UK.

¹⁷ *Poison PCs and Toxic TVs - E-waste Tsunami to Roll Across US: Are We Prepared?* Computer Takeback Campaign, February 2004. Page 16.

¹⁸ *Ibid.*

¹⁹ Directive 2002/96/EC of the European Parliament and the Council of 27 January 2003. Official Journal of the European Union. February 13, 2003 (Pages 24-39).

(lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, or polybrominated diphenyl ethers) in the manufacture of various types of electronic and electrical equipment. The directive does not apply to spare parts for the repair or reuse of electrical and electronic equipment. Banned substances may also continue to be used in products in which the substances' elimination or substitution is "technically or scientifically impracticable, or where the negative environmental, health and/or consumer safety impacts caused by substitution are likely to outweigh the environmental, health and/or consumer safety benefits."²⁰

Political scientists anticipate that increased standards promoted by the WEEE and RoHS Directives are likely to cause standards to improve globally. Simply put, manufacturers who wish to market their products to the more than 485 million citizens living in the 27 EU nations will be required to meet the standards outlined by the two directives.²¹

U.S. Response

The Resource Conservation and Recovery Act (RCRA), passed in 1976 and amended in 1986, is the primary federal law governing the disposal of solid and hazardous waste in the United States. The act gives the U.S. Environmental Protection Agency (EPA) authority to regulate the disposal of environmentally sensitive waste. While states are free to implement more stringent waste management policies, the act also establishes minimum standards that states must meet regarding the management and disposal of solid and hazardous waste.²²

In 2005, the U.S. Government Accountability Office (GAO) released a report, which asserted:

"Federal regulatory requirements provide little incentive for environmentally preferable management of used electronics. First, the governing statute, the Resource Conservation and Recovery Act, allows individuals and households to dispose of hazardous waste, including many used electronics, in landfills. Second, federal regulations do not provide a financing system to overcome the economic factors deterring recycling and reuse. Third, federal regulations do not prevent the exportation of used electronics to countries where disassembly takes place at far lower cost, but where disassembly practices may threaten human health and the environment."²³

²⁰ Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003. Official Journal of the European Union. February 13, 2003.

²¹ Selin, Henrik and Stacy D. VanDeveer. *Raising Global Standards: Hazardous Substances and E-Waste Management in the European Union*. *Environment*. Vol. 48. No. 10. December 2006.

²² History of RCRA. U.S. Environmental Protection Agency. <http://www.epa.gov/epawaste/laws-regs/rcrahistory.htm> accessed on March 11, 2008.

²³ *Electronic Waste: Strengthening the Role of the Federal Government in Encouraging Recycling and Reuse*. U.S. Government Accountability Office, November 2005. www.gao.gov/new.items/d0647.pdf

In years past, legislation has been introduced in Congress proposing a range of solutions, such as grant programs and tax incentives. In 2005, Representatives Mike Thompson (D-CA), Louise Slaughter (D-NY), former Congressman Randall ‘Duke’ Cunningham²⁴ (R-CA) and Mary Bono (R-CA) formed the bipartisan Congressional E-Waste Working Group to work on standardizing national laws for recycling and disposing of e-waste.²⁵ Citing the need “to develop national standards that will ensure environmentally sound and economical e-waste recycling and disposal strategies,” Goodwill Industries International joined the Congressional E-Waste Working Group in 2005. In 2007, a bi-partisan group of Senators and Representatives circulated a concept paper among stakeholder groups, including Goodwill, to develop a consensus blueprint for the establishment of a national electronics-recycling program that makes reusing and recycling electronic products easy for consumers. However, federal legislation has yet to be finalized and become law.

State Responses

Although the problem of electronic waste has not gained adequate attention among national-level policymakers to merit a national response, several states and local waste management agencies have enacted some form of e-waste management into state and local law. As of October 2009, 20 states and New York City had enacted provisions that prohibit disposal of certain electronics and establish mandatory recycling programs. The National Center for Electronics Recycling (NCER) monitors states enacting laws around electronics recycling.²⁶

State laws address a number of key issues:

- **Who Pays?** Providing incentives to encourage manufacturers, collectors, recyclers and the public to participate in a recycling program come with a price tag. Who should pay for it? Most states use a “producer responsibility” model, while California uses an “advanced recovery fee” (ARF) model.
- **Consumer Fees:** Several state laws or legislative proposals include provisions that prohibit collectors from charging consumers fees for collecting and recycling covered electronic devices. In California, however, advanced consumer fees are used to provide payments to authorized collectors and recyclers, fostering the development of recycling opportunities and offsetting the cost of properly managing these types of products at the end of their useful lives. Those who oppose charging fees argue that it creates a disincentive for turning in

²⁴ Press Release. “Reps. Thompson, Bono, Slaughter, and Wamp Host Unprecedented Forum to Discuss E-Waste Solutions.” September 13, 2006. <http://mikethompson.house.gov/PRArticle.aspx?NewsID=94>. Accessed November 13, 2009.

²⁵ U.S. Congressional Group Eyes E-Waste Disposal Laws. PC World. May 25, 2005.

²⁶ National Center for Electronics Recycling. www.electronicsrecycling.org/public/ContentPage.aspx?pageid=14. Accessed April 19, 2010.

an unwanted covered electronic device, thus encouraging the consumer to illegally dispose of the unwanted product.

In contrast to a consumer fee, a manufacturer's fee calls for manufacturers to comply with a number of requirements. In addition to paying fees, they must also operate recycling programs, and clearly and visibly label all the products that they sell in the state. If the manufacturer fails to comply with the state requirements, they are not allowed to sell their products in that state. Goodwill's partnership with Dell, known as the Reconnect program, prohibits fees from being charged to donors and collectors.

Prohibiting fee collection may cause challenges for some community-based nonprofit organizations that provide convenient collection locations for consumers. These organizations, including several Goodwill agencies that do not participate in the Reconnect program, contract with manufacturers and recyclers, who pay the organizations for the recyclable electronic devices they collect. Often, the community-based nonprofit organizations must pay recyclers to take monitors, which have no recyclable value. This creates a dilemma for nonprofit organizations. Sometimes they break even, but sometimes they lose money — money that could be used to provide services, such as job training to people in the community. In these cases, prohibiting the collection of fees on consumers could create a disincentive for community-based nonprofit organizations to play a vital role as a convenient collector of e-waste.

- **Covered Electronic Devices:** The electronic products covered by state e-waste laws range in scope. Most include personal computers (including laptop computers) and computer monitors with screens that are at least four inches when measured diagonally. Usually computers or monitors that are part of automobiles, washers and dryers, and medical equipment are not covered. Cell phones, unless they have screens that measure at least four inches diagonally, are often excluded. While some states have enacted laws that include televisions under the definition for covered electronic devices, other states have opted not to do so.
- **Market Share:** Some states require computer manufacturers to take back a portion of sold computers and accessories based on the total amount in weight sold in any given year, while other states simply do not have any set requirements. The lack of specified targets in these laws is hampering states' efforts at reducing the total amount of e-waste disposed of in landfills.
- **Retailers:** State e-waste laws usually prohibit retailers in the state from selling products from manufacturers that are not in compliance with the state's requirements. In addition, retailers are usually required to inform consumers about recycling resources in the state. Usually these requirements apply only to retailers of new covered electronic devices; however, some legislative proposals do not make this distinction. In these cases, requirements, especially requirements that retailers refrain from selling covered electronic devices that are not

clearly labeled, could keep retailers of used or refurbished electronics from engaging in a business that prolongs the life of those devices and thus reduces e-wastes' environmental impact.

- **Collectors:** State laws vary widely in their treatment of collectors. Some states require collectors to register with the state agency. Most states prohibit collectors from charging fees to consumers for collecting their unwanted covered electronic devices; collectors are often required to prove that fees were not charged. Several states also require that collectors prove that the electronic waste was collected from state residents or was originally sold in the state.

There are two basic methods for paying collectors that help to collect electronic waste. In some states, collectors contract with recyclers or manufacturers who pay the collectors a per-pound rate. In other states, collectors are paid by the state agency.

Many state e-waste laws or legislative proposals include provisions that require collectors to limit collections to computers that were relinquished by state residents. This may cause problems for Goodwill agencies that operate in territories that cross state lines.

- **Recyclers:** State e-waste laws usually require recyclers to register with and pay a registration fee up to \$2,000 — as is the law in Illinois — to the state agency. Recyclers are also often required to submit extensive reports to the state about recycled products. Recyclers also face the issue of depreciation of the metals they recycle. Depending on the state of the economy, the value of metals found in computers and other electronics can be so low that it would cost more for a recycler to scrap waste for recyclable items. Recyclers also suffer with costs related to transportation and storage when metals depreciate.

In some States, like Oregon, special parameters for recyclers are included within e-wastes laws to ensure that recyclers are properly disposing of electronic materials and are liable for their actions. Recyclers in Oregon must show “downstream due diligence.” Recyclers must also explain how they handle, contain and properly dispose of prohibited waste; including providing written records that show shipping documents and database extracts identifying where any electronic components or devices leave a recycling facility through to the point at which materials become a single material commodity suitable for processing.²⁷

- **Liability:** Collecting, recycling and disposing of e-waste raises two primary liability concerns. First, who is responsible for the data that is stored in computers? When a person relinquishes a computer, who is

²⁷ *Operations Plan Template For Permits for Facilities Primarily Processing and Storing Waste Electronic Devices*. State of Oregon, Department of Environmental Quality. www.deq.state.or.us/lq/pubs/docs/ElectronicsOperationsPlanTemplate.pdf. Accessed on April 10, 2010.

responsible for ensuring that their personal data does not fall into the hands of identity thieves? While most state laws and pending legislation are silent on the matter, laws that do address the matter put the responsibility on the consumers themselves. What this means is that a consumer must learn how to wipe a disk clean and do so before they relinquish their computer. If they do not, they risk becoming the victim of identity theft. For those who are not computer proficient, this can become a barrier to relinquishing a computer. As a result, these people may choose to store their unwanted computers rather than donating them or disposing of them properly.

Downstream liability is the second primary liability concern. If a law bans covered electronic devices from being disposed of in a landfill or shipped overseas, who is responsible for a device that is not disposed of properly — the collector, the recycler or the manufacturer?

- **Landfill Bans:** Most state e-waste laws include provisions that ban covered electronic devices from being disposed of in state or municipal landfills. From the perspective of local Goodwill agencies, it is important that landfill bans include plans for disposing unwanted electronic products. Without such plans, local Goodwill agencies are at risk of being burdened with disposing electronic products that are left at donation centers after hours when they are not attended by Goodwill staff. The National Center for Electronic Recycling (NCER) provides updated information regarding current states that have e-waste laws and land fill bans. To access the NCER link visit: www.electronicrecycling.org/public/ContentPage.aspx?pageid=14

Producer Responsibility Model

With the exception of California, state e-waste recycling laws use a “producer responsibility” model, wherein electronics manufacturers that intend to offer their covered electronic devices for sale in that state are required to register each year with the state agency that administers the e-waste program. Producers are also required to submit annual reports to state agencies, providing information that helps the agencies to determine each producer’s “market share.” The market share is the total weight of electronic waste for which each manufacturer is held responsible. Manufacturers must comply with a number of requirements. They must pay fees, operate recycling programs, and clearly and visibly label all the products that they sell in the state. If the manufacturer fails to comply with the state requirements, they may not sell their products in that state.

Often, states allow or require manufacturers to implement recycling programs. In these cases, a manufacturer must report to its state agency about the total weight of e-waste it has collected. In order to determine the manufacturer’s fair market share, the state agency subtracts this reported recycled amount from the market share for which the manufacturer is responsible. In cases where a manufacturer’s adjusted market share is determined to be zero, the manufacturer does not have to pay market share fees to the state. In cases where a manufacturer has collected more than its market share, some states will give “credits,” which may be applied toward the following year’s collection goals or sold to another manufacturer that does not have an adjusted market share that is determined to be zero.

Minnesota Model

In May of 2007, the Minnesota state legislature passed a law that required all manufacturers that produce video display devices for sale in the state to pay for the collection, transportation and recycling of televisions, computer monitors, laptops and any device that contains a CRT or a flat panel screen larger than nine inches diagonally.²⁸ The program holds manufacturers responsible for recycling at least 60 percent by weight of video display devices sold in the previous year or pay a fee to cover the recycling of their products during the first year. After the first year, manufacturers are required to recycle at least 80 percent of the previous year’s sales. Devices such as DVD players and printers can be collected; however, they are not defined as display devices under this law. This could be perceived as being helpful to manufacturers, considering that the average lifespan for televisions tends to be longer than desktop computers and laptops.

If manufacturers are unable to meet the required weight obligation, then they must pay a per-pound fee based on the difference of what was collected and how much that should have been collected. In other words, if manufacturers collect only 30 percent of their targeted collections goal, a per-pound fee would apply for the remaining 70 percent that is not collected. This fee would be reduced depending on how close the manufacturer

²⁸ S.F. No. 235, 4th Engrossment – 85th Legislative Session (2007 – 2008)

was in reaching its annual goal. As an incentive, a manufacturer can earn recycling credits if it collects more than it is required to collect and can be applied to future year obligations.

In order to ensure that recyclers and collectors are properly handling electronic devices, manufacturers must conduct and document due diligence assessments,²⁹ which means that they are responsible for ensuring that recyclers and collectors are complying with proper handling requirements. It is up to the retailers that sell the manufacturer's products in their stores to provide recycling and collector information to their customers.

Texas Model

The State of Texas has adopted a producer responsibility model, yet its provisions are considered to be less strict than those in other states. In June of 2007, the Texas state legislature passed legislation requiring manufacturers to develop and implement recovery plans for computers and computer equipment (excludes televisions); however, unlike Minnesota and other states that have implemented manufacturer responsibility models; there are no set requirements for the total amount of waste that needs to be collected for each manufacturer. Manufacturers are only responsible for implementing plans that are "reasonably convenient and available for consumers" and are "designed to meet the collection needs of the consumers in the state."³⁰ Manufacturers must also submit annual reports documenting recycling and reuse efforts of computer equipment and verify that it is being done in an environmentally sound matter.³¹ Additionally, consumers are not subject to pay any fees for recycling and are given the option to return their computer equipment through the mail.

²⁹ S.F. No. 235, 4th Engrossment – 85th Legislative Session (2007 – 2008)

³⁰ The Manufacturer Responsibility and Consumer Convenience Computer Equipment Collection and Recovery Act. 80 (R) HB 2714

³¹ Ibid

Advanced Recovery Fee Model

California remains the only state that has adopted the advanced recovery fee model. Under this model, consumers pay a fee upon the purchase of a covered electronic device to pay for collecting and recycling the product when it is no longer wanted. Collected fees go into a statewide recycling fund to manage the program. These fees are used to reimburse recyclers and collectors who submit receipts showing they have collected covered devices from state residents.³²

California Model

In 2003, California became the first state to enact a law that implemented stricter standards with regard to environmentally sensitive waste disposal, including the disposal of e-waste. Since then, concerns about the voluminous, bulky and environmentally sensitive nature of e-waste has helped e-waste to gain traction in many state legislatures. Several Goodwill agencies in California successfully advocated for the inclusion of provisions in the law that allow the state to authorize nonprofit agencies, such as Goodwill, to collect electronic waste and transfer it to a state-certified recycler.

Collectors must follow stringent guidelines if covered electronic waste is being shipped to another state or country to ensure that the waste is handled in accordance with the applicable U.S. and international laws, while each recycler is required to demonstrate to the state that recycling facilities meet specific requirements while handling, processing, refurbishing or recycling electronic devices.³³

It is important to note that the electronic waste recycling fee is not a deposit, and that the covered products do not contain "redemption value." Consumers are not entitled to reimbursement of the fee when covered products are recycled.³⁴ Depending on screen size at the time of purchase, fees range from \$8 to 25 dollars. The Government Accountability Office will release a report in the later portion 2010 comparing the various state e-waste laws and effectiveness of programs in waste collection.

³² Electronic Take Back Coalition, "Comparison of State E-Waste Laws." October 10, 2008 Accessed November 13, 2009 from <http://www.computertakeback.com/legislation/Detailed%20State%20Law%20Comparison%20ALL.pdf>

³³ Ibid.

³⁴ Accessed from [ecycle.org](http://www.ecycle.org/fee.htm) on April 10, 2010 at www.ecycle.org/fee.htm

Goodwill's Response

National Perspective

Goodwill agencies nationwide have been receiving donated electronic products for years — whether they accept them or not. In 2004, for example, 66 percent of all local Goodwill agencies reported that electronic computer equipment had been “dumped” or left after hours by consumers at their donation sites. Most electronic donations are unusable, and safely recycling or disposing of these products directly impacts Goodwill's job training and career services in many communities.

In 2004, Goodwill Industries and Dell began the Reconnect partnership program to make computer recycling more accessible for consumers. Although it has taken time to bring the partnership to scale, local Goodwill agencies in 36 states are now part of the Reconnect program, including 21 statewide Reconnect programs (i.e. all local Goodwill agencies within a state participate and collaborate through Reconnect), including the District of Columbia. As a result, there are close to 2,000 Goodwill donation sites, meaning that nearly 60 percent of all Goodwill donation centers are part of the Reconnect partnership with Dell.

Since the partnership began, more than 97 million pounds of electronic equipment has been recycled through the program. The impact of this partnership has been significant and is rapidly expanding. When the partnership was formed, local Goodwill agencies reported having handled more than 23 million pounds of electronics.

Local Perspective

Local Goodwill agencies handle and process computer donations in a variety of ways. The majority of Goodwill agencies will test and resell working computer systems and monitors “as is.” Some Goodwill agencies will resell or donate refurbished (repaired) computer systems. These computers are typically resold as “bare bones” systems without operating systems, or as “full” systems with operating systems and basic software.

A handful of local agencies take it one step further by salvaging computer parts and components from dismantled computer systems to create refurbished computers that can then be sold or donated. This activity has numerous benefits including the following:

- Hands-on technical skills-building experiences for Goodwill program participants
- Affordable computers for Goodwill customers
- Extended lifespan of computers and peripherals, thus diverting them from landfills.

In addition, some Goodwill agencies have also diversified their computer recycling operations by offering certified IT repair, training, and/or data (hard drive) destruction services to business and residential customers. At the same time, they are expanding their client workforce development training and career services.

In the case of Reconnect, Dell and Goodwill Industries do not accept liability for lost or confidential data or software stored on hard drives (external or internal). The consumer is responsible for backing up any valuable information and erasing sensitive data from the hard drive before dropping it off. Though donors are asked to remove all data prior to donating electronics, they often fail to perform this removal properly. Due to the sensitive nature of the data that could be found on donated equipment, Goodwill agencies that elect to remarket laptop and desktop computers or individual hard drives in their retail stores are required to wipe the hard drive to Department of Defense standards or completely destroy the hard drive. Dell's environmental partners are required to wipe remarketable hard drives or destroy those that are not remarketable.

Read more about Dell's policies regarding donated equipment.

- Dell's Environmental Partner Performance Standard:
<http://i.dell.com/sites/content/corporate/environment/en/Documents/Environmental%20Partner%20Performance%20Standard%20May%202009.pdf>
- Dell's Electronics Disposition Policy:
<http://i.dell.com/sites/content/corporate/environment/en/Documents/Electronic%20Disposition%20Policy%20May%202009.pdf>
- Dell's Data Destruction Policy:
<http://i.dell.com/sites/content/corporate/environment/en/Documents/data-destruction-policy.pdf>

Local Goodwill agencies dispose of unwanted electronics in a number of ways. Prior to the establishment of the Reconnect program, more than half of all local Goodwill agencies sent some or all unwanted electronic equipment to landfills. Agencies would also work with recycling or asset management companies, which would take unwanted equipment for free, pay salvage prices for unwanted equipment that may have resale value, and/or charge for disposing of electronic products that have little or no value.

The recycling industry is made up of hundreds of asset management companies and end-of-life recyclers. Asset management companies collect and sell high volumes of electronic parts and components in secondary markets. Some may engage in questionable practices including exporting environmentally sensitive items overseas. End-of-life recyclers destroy electronic systems, parts and components.

Ensuring the proper and safe disposal of electronic products that have been donated to Goodwill is a high priority. Furthermore, several state laws require collectors to transfer unwanted electronic products only to reputable recycling companies. Recycler audits that ensure the recyclers are properly processing electronic waste are costly and cumbersome, and most Goodwill agencies are ill-equipped to perform such audits. The Reconnect partnership, which performs "down-stream" audits, minimizes the chances that electronic waste collected at a Goodwill Reconnect donation site is improperly processed once transferred to recyclers. In California, the state performs audits during the certification process for recyclers.

Green Jobs

Workers in green jobs created by Dell and Goodwill help recycle and repurpose electronics that could otherwise end up in landfills or, worse, as e-waste in developing nations. In addition, the revenue generated from recycled computer equipment supports Goodwill's job training programs, employment placement services and other community-based programs for people who have disabilities, lack education or job experience, or face other employment challenges.



Goodwill is a leader in the “reduce, reuse and recycle” model. The Reconnect partnership teaches the public the importance of extending the lifecycle of their unwanted electronics through environmentally responsible computer disposal. At the same time, it creates jobs and employment training for entry-level and green-collar jobs for people in need of work.

Congress included the Green Jobs Act in a comprehensive energy bill that passed in December 2007. The Green Jobs Act supports training for jobs in the renewable energy and energy efficiency fields. Yet more could be done to support industries and workers who are engaged in strategies that conserve energy and reduce pollution

Local Goodwill Agency Profiles

Goodwill Industries of San Francisco, San Mateo and Marin Counties (CA)

In 2004, Goodwill Industries of San Francisco, San Mateo and Marin Counties became the second agency to partner with Dell in the Reconnect program. This was around the same time that California passed e-waste legislation into law, which enacted the advanced recovery fee for CRT and LCD electronic devices sold within the state. The Goodwill is a certified collection agency in California and can collect CRT and LCD electronics at participating local Goodwill agencies.

The revenue generated from recycling electronic equipment provides Goodwill Industries of San Francisco, San Mateo and Marin Counties with the ability to develop and sustain job opportunities for program participants. These job programs vary, ranging from wiping and refurbishing to dismantling computer components. All refurbished computers and accessories are then resold at the agency's Goodwill ReCompute retail store, while televisions and other consumer electronics are sold at each Goodwill store.

With the assistance of the Reconnect program, Goodwill Industries of San Francisco, San Mateo and Marin Counties diverts more than two million pounds of computers, televisions and other electronics from landfills each

year. All of the donations are recycled with recycling companies that have a strict policy of environmental stewardship, including those that do not qualify under the Reconnect program, so no covered electronic devices that have been donated to the Goodwill make it to landfills.

In an effort to combat recycling fraud, California has implemented extensive state-certification standards that collection agencies must meet in order to act as collectors in the state. In response, Goodwill Industries of San Francisco, San Mateo and Marin Counties conducts numerous e-waste training programs for those involved, and has stringent reporting requirements to account for each electronic device it recycles or refurbishes.

Goodwill Industries of Central Texas (Austin)

Goodwill Industries of Central Texas's Environmental Business Service (EBS) division works with local organizations, government agencies and corporations to address electronic waste concerns. The Goodwill institutes economically and environmentally sound methods to recycling and reusing donated electronic equipment. The electronic recycling initiatives provide the Austin Goodwill with the opportunity to generate revenue to fund its mission while protecting the environment. For the past decade, Goodwill Industries of Central Texas's environmental programs have evolved into an integrated electronic recycling approach that currently diverts more than 250 tons of electronic waste from landfills each month. In addition, the agency sells approximately 140-200 computers per month, including computer parts, which generated revenue totaling \$2.15 million in 2009 to support job training, employment placement services, and other community-based services for the people who need them most.

Goodwill Industries of Central Texas attributes the success of its e-waste recycling program to its Computer Works Retail Store and its involvement with the Reconnect program. The Computer Works retail store houses the Goodwill's computer recycling program, where donated computers are de-manufactured and resold or recycled. Goodwill Industries of Central Texas's intent focus on providing quality products builds customer confidence and keeps electronic refunds consistently under .5 percent.

Recommendations

Exports

Goodwill agencies that collect electronic waste have a social responsibility to ensure that the electronic products collected at Goodwill donation centers are processed by recyclers responsibly. Dell became the first major computer manufacturer to ban the export of non-working electronics to developing countries as part of its global policy on responsible electronics disposal.³⁵

Local:

- Utilize the Reconnect program to ensure proper downstream auditing of electronic waste recyclers.

State:

- Implement strict state-certification standards for recyclers and restrict recyclers from transporting electronic devices to another state.

Federal:

- Ban the export of electronic waste to countries that are not members of the European Union.

Landfill Bans

While several states have implemented landfill bans already, some did not develop plans for the disposal of covered electronic devices once the bans took effect. As a result, some Goodwill agencies observed that covered devices were being “donated” after business hours. Through the Reconnect program, Dell’s environmental partners are contractually committed to handling these unwanted devices in an environmentally safe manner.

Local:

- Work to minimize disposal of electronic products in landfills by transferring unwanted electronics to recyclers where downstream audits have been conducted and determined to be clean.

State:

- Implement plans for proper disposal of electronic waste prior to implementing a state landfill ban.
- Require manufacturers to provide information to consumers regarding proper disposal of covered electronic devices and authorized drop-off location sites in various regions.
- States should develop updated lists of certified collectors and recyclers to ensure that e-waste is properly discarded and not dismantled or destroyed in a hazardous manner.

Federal:

- Create incentives for states to minimize the amount of electronic waste that is disposed in landfills.

³⁵ “Dell Takes Strong Stance Against Exporting E-Waste” Press Release. Dell. <http://content.dell.com/us/en/corp/d/press-releases/2009-05-12-export-policy.aspx>. Accessed April 20, 2010.

Televisions

Television manufacturers have been slow to take on responsibility for the disposal of televisions when they are no longer wanted. The market value for unwanted televisions is low. When a broken television is donated to Goodwill, the agency often must pay recyclers to dispose of them. As a result, some Goodwill agencies no longer accept television donations. In these cases, some televisions are likely to be dumped illegally. Depending on the state, some laws prohibit televisions from being discarded into landfills.

Local:

- Support agencies that provide consumers in their communities with free electronic waste collection.

State:

- Enact legislation that diverts televisions from landfills, reimburses recyclers for properly disposing of them, and provides convenient opportunities for consumers to properly dispose of unwanted televisions.

Federal:

- Support states in the implementation of programs that divert unwanted televisions from landfills.

Annual Goals for Manufacturers

While Goodwill supports setting goals that require manufacturers of covered electronic devices to take back their market share, Goodwill agencies are concerned that, once certain manufacturers achieve their annual collections goal, they will no longer pay collectors a reasonable price for covered electronic devices until the following year, when they have a new goal to reach.

Local:

- Work with recyclers and manufacturers that agree to pay a minimum price per pound regardless of the current market rate or whether they have achieved their annual goals.

State:

- Create incentives for manufacturers to exceed goals for collecting their market share.

Refurbishing

By extending the life of covered electronic devices, refurbishing computers minimizes the environmental impacts associated with their disposal. Some Goodwill agencies have job training programs that teach clients how to refurbish computers — a valuable job skill.

Local:

- Leverage donation of salvageable electronic products to provide skills training while generating revenue by developing refurbishing programs and selling refurbished electronics in Goodwill stores.
- Provide opportunities for IT certification to program participants.

State:

- Clarify that sellers of refurbished machines are not subject to laws intended for producers of new electronic products.
- Clarify that entities that refurbish covered electronic products are allowed to refurbish and resell electronic products regardless of whether the original manufacturer has complied with the state's electronic waste law.

Fees

While recyclers will often pay Goodwill agencies for collected covered electronic devices that have recycling value, recyclers often charge Goodwill agencies to take covered electronic devices that do not have recycling value (such as monitors containing CRTs). As a result, some Goodwill agencies have covered their costs by charging nominal fees to consumers when they drop off covered electronic devices.

Local:

- Support agencies that provide consumers in their communities with free electronic waste collection, like the Reconnect program.
- Partner with recyclers and manufacturers that adequately compensate collectors for collection costs.

State:

- Enact legislation that diverts CRTs and other low-value electronic waste from landfills; compensates collectors and recyclers for properly disposing of televisions; and provides convenient opportunities for consumers to properly dispose of unwanted televisions.

Federal:

- Support states in the implementation of programs that divert low-value electronic waste from landfills.

Restricting Collections to State Residents

States naturally want to ensure that they do not become e-waste dumping grounds; therefore, they limit collections to e-waste that is generated by the state. This poses a problem for Goodwill agencies that have territories that cross state lines because such multistate Goodwill agencies may be limited to collecting covered electronic devices from just a portion of their territories, or be required to run multiple, yet parallel, collection programs in each state where they operate.

Local:

- Partner with stakeholders that support collectors in neighboring states as well as the home state and/or participate in the Reconnect program.

State:

- Minimize barriers and requirements for nonprofit collectors that have service sectors that cross state lines and use funds from collecting electronic waste as a source of revenue for funding community projects in each state.
- Exempt nonprofit collection entities that serve multiple states from provisions that prohibit collection of electronic waste from residents in neighboring states.

Federal:

- Encourage regional cooperation among states with electronic waste laws.

Green Jobs

Local, State and Federal

- Promote language that expands the definition of a green job to include recycling, computer refurbishing, and green building construction that preserve other precious resources and our environment.

Conclusion

Through the Reconnect partnership, Goodwill and Dell have answered the call to help our nation address the growing crisis of electronic waste. With more than 99 local Goodwill agencies participating in the Reconnect partnership, the program was responsible for the recycling of more than 97 million pounds of electronic waste between 2004 and 2009,

Goodwill, with its strong infrastructure of more than 3,300 donation locations nationwide is strongly positioned to provide convenient drop-off locations for consumers to discard their unwanted electronics; and to ensure that these products are transferred to entities that will safely and properly handle and recycle these items.