



**Fifth Annual
Computer Report Card**
May 2004

Take It Back! Make It Clean! Make It Green!

[COMPUTER **TAKE ← BACK** CAMPAIGN]



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Fifth Annual Computer Report Card

May 2004

Take It Back, Make It Clean, Recycle Responsibly

Computer TakeBack! Campaign

Contents

The Report Card is issued annually by the Computer TakeBack Campaign (CTBC) to document whether manufacturers are including environmental design concepts into their products and taking responsibility for the entire life cycle of those products, and to encourage consumers to leverage their buying power to foster greater corporate responsibility for protecting public health, worker safety and the environment.

I. Executive Summary

II. Introduction

- A Thousand Mile Journey
- A Beginning
- About the Computer Report Card
- US Still Falling Behind

III. The Problem

IV. Report Card Results

- Grades
- Report Card Rankings
- The Beginners: Dell, HP, NEC
- Those Trailing the Beginners
- Still at the Starting Gate
- The Bench Warmers

V. EPR and the Thousand Mile Journey: A Step-by-Step Road Map for Beginners

- Step 1. Take it Back Now!
- Step 2. Environmental and Social Justice: Protecting Human Assets
- Step 3. Phasing Out Toxics
- Step 4. Monitoring Occupational Health and Safety

VI. Conclusion

VII. Take Action

VIII. Appendix

- Appendix A: Statement of Principles on Producer Responsibility
- Appendix B: Group Members and Contact Information
- Appendix C: Computer TakeBack Campaign Chronology
- Appendix D: Computer TakeBack Campaign Platform
- Appendix E: Questionnaire
- Appendix F: Computer Manufacturer URLs

I. Executive Summary

An old Chinese adage says a thousand mile journey begins with a first step. In 2003 the Computer Takeback Campaign (CTBC) witnessed positive signs of manufacturers *beginning* to incorporate principles of extended producer responsibility (EPR) into their environmental programs.

This year the Computer report card recognizes those manufacturers who are taking the first step on the road to manufacturers' responsibility by implementing phase-outs of hazardous chemicals and by developing effective and safe collection, reuse and recycling systems.

Although many of these programs are poorly advertised and charge customers high "waste end" recycling fees for services, some of these programs are substantial steps toward closing the gap between the types of programs and recycling services required by law in Europe, Japan, Taiwan and South Korea and those available to consumers in the US.

A thousand miles may have seemed like a long way to a Chinese monk a thousand years ago, but today a thousand mile journey can take only a few hours by plane or a few days by car. Innovations from the electronics industry continue to shrink our perception of time, space, and distance. The high-tech electronics industry – including the chip makers, and computer, telephone and device manufacturers who are making it easier to surf the Internet, to stand in the grocery store line and chat with grandma who lives a thousand miles away, or for scientists to dial up a robot on Mars — is the optimal industry to lead the journey to global environmental sustainability.

The results of this year's Report Card indicate that while there have been measurable improvements by some companies, the progress is uneven and in most cases still at the beginning stages (some companies have barely even begun). Hewlett Packard and Dell, earned high scores by refining a "Statement of Principles for Producer Responsibility of Electronic Waste {See Appendix A) drafted by CTBC. The Principles assert that "manufacturers and producers accept responsibility for continually improving the environmental aspects of the design of their products and for the end-of-life management of their products." Hewlett Packard earned additional recognition for taking their support for producer responsibility one step further and publicly supporting a new producer responsibility law in Maine.

Although Hewlett Packard and Dell earned the highest score for their bold leadership, these two companies barely managed to achieve a passing grade. Most manufacturers couldn't provide recycling data for their U.S. programs or their recycling rates were below 2 percent. There are clearly measurable differences between the companies that responded to the CTBC survey, however, all of the responses demonstrate that the industry has a long way to go. The rankings are as follows:

The Beginners

HP	54.5
Dell,	52.5
NEC	49.5

Those Trailing the Beginners

IBM	47.5
Sony	42.5
Toshiba	40
Apple	37
Toshiba	35.5
Philips	34.5
Lexmark	32

Still at the Starting Gate

Emachines	0
Gateway	0

The Bench Warmers

Acer	0
AST	0
Brother	0
Canon	0
Daewoo	0
Epson	0
Fujitsu	0
Hitachi	0

Lucky Goldstar	0
Oki	0
Seiko	0
Samsung	0
Sun Microsystems	0
Viewsonic.	0
Wyse Technologies	0

While the CTBC members¹ are cautiously encouraged by improvement in reduction in hazardous materials, and the launch of corporate recycling programs, the fact remains that most of these changes are only at the early stages and are being driven by regulations and consumer pressure. Policies at the state and local levels are key to raising the rate of electronics recycling above the currently unacceptable 2 to 10% range. Policy must create a level playing field that sets goals and timetables and allows the companies to use their ingenuity to determine how they will meet those goals.

Key aspects of superior environmental performance include:

- Effective takeback programs that recover the fair share of historic e-waste and all future e-waste
- Robust design for the environment programs that design out the most toxic materials and design new products that are more easily re-used and recycled
- Transparency of information in the production and disposal supply chains
- Sustainable supply and disposal chain management in both manufacturing and recycling, and
- Rewards for companies that go beyond compliance and push the envelope in creating value for their customers in the environmental performance of their products.

This year's CTBC Report Card makes several major findings that challenge companies to improve in the following ways:

- **Take it Back** We need to establish effective and sustainable producer takeback policies throughout the U.S. Since environmental gridlock and a climate of rollbacks currently exist in Washington D.C., these policy initiatives must be pioneered at the state level. Manufacturers must exercise their political muscle and work with environmental and public health advocates to accomplish this goal until eventually the Bush Administration or its successor embraces the producer responsibility approach.
- **End Double Standards.** We need to put an end to global double standards and offer effective takeback programs, worker health protections, and environmentally sustainable products to all consumers, regardless of regulations or the lack of them in particular regions of the world. The U.S. continues to be an international laggard but is beginning to show signs of closing the gap.
- **Pay a Fair Share for Hazardous Waste Clean-Up.** The most critical current challenge is the development of a fair and effective method of financing the collection and processing of both the historic ("legacy") e-waste as well as a system that will guarantee sustainable solutions to new products currently coming onto the market (future e-waste). The industry is currently divided into two camps:
 - a. Those who favor individual producer responsibility – such as HP and Dell - which have agreed to take back all of their products and agree to internalize costs without a legislated consumer fee; and
 - b. Those who favor a small consumer fee at the point of purchase, similar to the S.B. 20 bill that passed in California in 2003. IBM and much of the TV industry favor this approach, since it would significantly minimize their historic liabilities. For instance, IBM was historically the market share leader for PCs and is responsible for a large share of the "legacy" personal computer e-waste. Since their market share has now dipped to below 5%, if they succeed in limiting their share of financial responsibility through a small consumer fee, they will reap a huge windfall financial bonanza – we calculate it at hundreds of millions of dollars – and these costs will have to be borne by their competitors and taxpayers.



The way that this conflict is resolved through current legislative battles at the state level and eventually at the national level will determine whether or not the U.S. will continue to be an e-waste laggard or will begin to catch up to the leadership of other countries.

- **Develop Tracking Systems for Occupational Health and Safety** Companies need to develop efficient tracking systems for occupational health and safety that differentiate between acute injuries (slips and falls), chronic injuries (ergonomic), acute illness (short-term exposure from a chemical accident), and chronic illness (due to long-term chemical exposure) and which document incidents of cancer, reproductive problems, high rates of miscarriages and birth defects, which have been linked to industrial practices.
- **Develop Standard Measurements for Recycling and Toxics Reduction.** We need to create a standard set of environmental measurements for recycling, toxic reduction, supply chain management and auditing so that companies can avoid the charge of green washing and the companies who are doing good work can be acknowledged and rewarded in the market place. While it is clear that there has been measurable progress during the past year in response to the significant pressures on the companies, the fact remains that even the companies that have started consumer take back programs are still only recycling about 2% of their products when compared to current sales. Until these rates increase dramatically, the volume of legacy e-waste will continue to increase rather than decrease.
- **Supply and Disposal Chain Management.** Likewise, there needs to be effective and transparent tracking systems and supply and disposal chain management for recycled materials. Supply chain management for recycled materials and tracking systems provide transparency and accountability that is currently not available.

II. INTRODUCTION

A Thousand Mile Journey

If a thousand mile journey begins with the first step, then the journey toward environmental sustainability begins with manufacturers taking responsibility for the environmental performance of their products, from the design stage to recycling or disposal. The idea that the whole journey is contained in the first step refers undoubtedly to the importance of *beginning*, to the necessity of getting off to a right start in anything that one undertakes. This year the Computer Takeback Campaign (CTBC) witnessed positive signs of manufacturers *beginning* to incorporate principles of extended producer responsibility (EPR) in their environmental programs. The objective of EPR is to make brand name manufacturers and distributors financially responsible for the environmental performance of their products from the product's conception to its obsolescence.

The Report Card is issued annually by the (CTBC) to encourage computer manufacturers to takeback products at the end of the products life, include environmental design concepts into the life cycle of their products and to encourage consumers to leverage their buying power to foster greater corporate responsibility for protecting public health, worker safety and the environment.

A Beginning

In 2003, several computer manufacturers took the first step in the journey on the road toward an environmentally sustainable electronics industry by developing and implementing recycling programs for their U.S. customers. Hewlett Packard and Dell took the biggest steps by indicating their support for the Statement of Principles for Producer Responsibility for U.S. Electronic Waste.

Extended Producer Responsibility

The Computer TakeBack Campaign supports the guiding principle called Extended Producer Responsibility (EPR) for post-consumer electronics waste. The objective of EPR is to make brand name manufacturers and distributors financially responsible for their products when they become obsolete. Our ultimate aims are pollution prevention and waste avoidance through a hierarchy of practices, including source reduction, reuse, re-manufacturing and recycling.

However, the recycling programs of Dell, HP and other companies are not well advertised and usually charge customers recycling fees for services. A recent review of these recycling programs found them to be time-consuming, sometimes expensive and in need of improvement.¹ CTBC views these recycling programs as a small step toward closing the gap between the types of programs and recycling services offered to European, Japanese, Taiwanese and South Korean consumers and those offered to consumers in the U.S.

These modest, beginner services offered by computer makers are occurring as a result of pressure from CTBC as well as regulatory outcry from local and state governments for relief from the possible \$7.5 billion burden of recycling hazardous electronic waste.²

Hewlett Packard earned the highest score in the Computer Report Card in part for publicly supporting landmark takeback legislation in Minnesota and Maine. In April 2004, Maine became the first state in the union to require manufacturers of video display devices to take responsibility for their own waste products.

Dell, Inc., which received a failing score on last year's Computer Report Card and was targeted by the CTBC for being a market share leader and environmental laggard, made a dramatic turn-around this year by eliminating the use of prison labor, making significant improvements in their recycling programs for U.S. consumers, and engaging CTBC leaders in personal dialog about the Campaign's goals and the companies progress and plans.

However, the enormity of the environmental problems caused by electronics manufacturing and hazardous waste disposal will continue to overshadow the incremental steps taken by individual companies unless more manufacturers vigorously advocate for changes in U.S. laws that are at least as stringent as goals adopted by the European Union. Manufacturers must provide significant resources to finance the development of a convenient and effective collection, disassembly, reuse and recycling infrastructure.

About the Computer Report Card

Whether computer makers are finding themselves on a forced march or an enlightened journey toward manufacturer responsibility, the CTBC is happy to report the incremental changes in our 5th Annual Computer Report Card.

Computers contain **scores of toxic materials that pose health threats** to production workers, people living near factories where computer components are produced or sites where old computers are dumped, as well as for people who recycle them without adequate protection.¹

The Silicon Valley Toxics Coalition's Clean Computer Campaign began publishing its computer Report Card in 1999 to answer these consumer concerns. It was based on evaluation of the web sites of leading computer product manufacturers on the information they share with consumers about their environmental policies and the environmental features of their products. The Report Card received greater public attention in 2001 when the more than 20 groups participating in the national CTBC jointly released the 3rd Annual Computer Report Card.

The 2002 Report Card looked at the degree to which these firms were implementing producer takeback, working to reduce the environmental impacts of the production and disposal of computer equipment, producing environmentally sound products, and protecting workers. Armed with this information, consumers were better informed to choose those products that met the best environmental standards and are made by the most responsible companies.

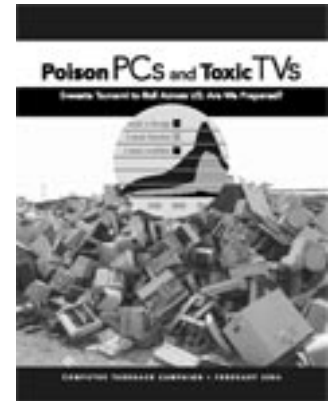
This year the CTBC sent surveys to 28 companies questioning them on issues ranging from recycling policies to toxic phase-outs. We received some response from roughly half of those surveyed. Nine companies filled out the survey.

Almost 70 percent of the CTBC survey is focused on a company's willingness to go beyond compliance with U.S. law and close the gap between services offered European customers and U.S. customers. The European Union's (EU) Waste Electrical and Electronic Equipment (WEEE) and Reduction of Hazardous Substances (RoHS) directives adopted in October 2002, require the elimination of certain hazardous materials and set standards for producer responsibility for recycling and takeback.

Japan, which passed the Appliance Recycling Law in 2001, now requires takeback of certain electronic products and computers. South Korea and Taiwan also have takeback programs in place for electronics.

U.S. Still Falling Behind

Since the U.S. does not have similar national takeback laws or regulations and recycling requirements, most companies have not taken the initiative to implement permanent policies in the U.S. Most of the 19 sellers who did not respond to the survey have no visible recycling program in the U.S. Unfortunately, local governments pick up the financial tab for the electronics industry corporate *laissez faire* attitude toward its hazardous waste. More than 26 state legislatures responded to this corporate inaction by introducing electronic waste recycling laws. Unfortunately, many of the bills are being delayed by computer manufacturers opting to use their political muscle to prevent state legislation from passing, rather than use their tremendous brain trust to change their polluting practices.



Last year a California Electronic Manufacturer Responsibility Act was reduced by industry lobbyists to a consumer recycling fee of \$6 to 10 on new televisions and computer monitors. The \$6 to \$10 fee is not adequate to cover the \$10 to \$60 price tag for recycling a television or computer monitor that contains 3 to 8 pounds of lead. Although the recycling fee on electronics represents the first of its kind in the nation and acknowledges that there is a significant cost associated with electronic waste, local and state governments will have to make up the cost for the shortfall. The law does *not* require the manufacturer to participate in the collection, or the processing of waste or to pay for the proper clean up of its hazardous waste legacy in the state. A recent report by the CTBC, (*Poison PC's and Toxic TVs – E-waste Tsunami to Roll Across US: Are We Prepared?*) found that California's flawed policy, if extended across the US, would result in a bill to taxpayers of anywhere from \$7.5 to \$45 billion.

While companies lobby to stall takeback legislation, hazardous electronic waste is quietly shipped overseas to countries where workers earn pennies per hour and do not receive the same health and safety protections as workers in the U.S. Companies are also turning to U.S. prison laborers who are frequently given inadequate tools to dismantle hazardous waste and who are not protected by federal labor and occupational health and safety standards.

This year, the Computer Report Card recognizes those manufacturers who are taking the first step on the road to manufacturers' responsibility by implementing phase-outs of hazardous chemicals and the development of effective and safe collection, reuse and recycling systems.

III. THE PROBLEM

Shifting the costs for managing discarded computers and electronics to brand owners and producers creates a powerful market incentive to improve product design and reduce the use of toxic materials. The policy response to America's e-waste crisis must protect the public health, the environment, and taxpayers by promoting clean design and the environmentally superior management of discarded products.

Studies estimate that 315 to 600 million desktop and laptop computers in the U.S. will soon be obsolete. Discarded computers and other consumer electronics (so called e-waste) is the fastest growing portion of our waste stream — growing almost 3 times faster than our overall municipal waste stream.

Discarded computers and electronics are hazardous waste. The 315 million or more computers that have or will become obsolete contain a total of more than 1.2 billion pounds of lead. About 40% of the heavy metals in landfills, including lead, mercury and cadmium, come from electronic equipment discards. The health effects of lead on children are well known and just 1/70th of a teaspoon of mercury can contaminate 20 acres of lake, making the fish unfit to eat.

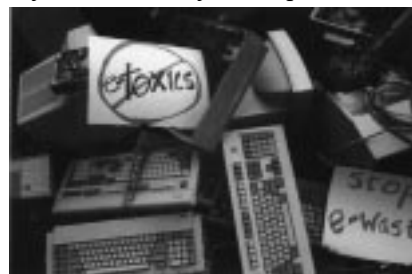
Recycling computers isn't like recycling old cardboard. Less than 10% of discarded computers are currently recycled. What happens to the rest? Many older computers are either stored (in basements, garages, offices, closets and homes awaiting a decision) or increasingly tossed out with the trash out of ignorance of the hazards contained in them.

And what about the 10% that are recycled? Some discarded equipment is handled by firms that operate under strict environmental controls and high worker safety protections.¹ Many other firms do not operate under strict controls, removing the valuable metals from the equipment and sending the remaining scrap to landfills or incinerators. Without adequate protections, workers dismantling discarded electronic equipment are exposed to many chemical compounds with known and suspected negative health effects. Considerably more equipment — one estimate sets the figure as high as 80% of collected e-waste — is shipped overseas for dismantling under horrific conditions, poisoning the people, land, air, and water in India, Pakistan, China, other Asian nations, and possibly Mexico and West Africa as well. See “Exporting Harm: The High Tech Trashing of Asia”

<http://www.svtc.org/cleancc/pubs/technotrash.pdf>

As electronics manufacturers take increasing responsibility for the environmental impacts of their products, it is important for all parties to pay strict attention to exactly where and how the hazardous electronic waste collected by manufacturers is recycled. Although this issue was not a criterion for this year's Report Card, it will be, starting with the upcoming year. This additional assessment will be key to the next phase of the Report Card, focusing on compliance with criteria designed to protect workers, communities, and the environment wherever manufacturers' hazardous waste is handled or processed. Some of the greatest environmental and health impacts occur during the final processing (e.g. smelting) of the hazardous components, such as circuit boards and leaded glass. In order to prevent the continued externalizations of these end-of-life health and environmental costs, the Computer TakeBack Campaign will be monitoring and assessing manufacturers' practices for keeping their hazardous components out of landfills, prisons and developing nations, including for final processing. This increased level of transparency for end-of-life management is an essential part of true manufacturer responsibility for the lifecycle impacts of their products.

As more and more manufacturing of parts occurs in developing nations, US manufacturers (some of whom are simply assemblers) will be held increasingly accountable for the environmental and health impacts on their supply chain, as well.



Electronic recycling operations are also active within America's prison systems. Inmate laborers are not automatically afforded the same degree of worker health and safety protections as are people employed on the outside, nor are they paid comparable wages. Moreover, reliance on high tech chain gangs will likely frustrate development of the free market infrastructure necessary to safely manage our mountains of e-waste. Prisons are also taxpayer-supported institutions. (See more information about prison labor and recycling in “Corporate Strategy for Electronic Recycling: A Tale of Two Systems.” http://www.svtc.org/cleancc/pubs/prison_final.pdf

Corporate practice and public policy have failed to address the problems. At present, the cost of managing discarded computers and electronics falls on taxpayers and local governments. Local governments, private agencies, and individual consumers have been handed the most responsibility for responding to the e-waste crisis. Brand owners and manufacturers in the U.S. have dodged their responsibility for management of products at the end of their useful life, while public policy has failed to promote producer take back, clean design, or clean production. Taxpayers are paying dearly for the consequences of manufacturing choices they did not make and over which they have little control.

(See **Poison TV's and Toxic TV's** http://www.computertakeback.com/the_problem/ppcsttvs2004.cfm)

The Solution

The goal of the CTBC is to protect the health and well being of electronics users, workers, and the communities where electronics are produced and discarded by requiring consumer electronics manufacturers and brand owners to take full responsibility for the life cycle of their products, through effective public policy requirements or enforceable agreements.

Studies estimate that 315 to 600 million desktop and laptop computers in the U.S. will soon be obsolete. Discarded computers and other consumer electronics (so called e-waste) are the fastest growing portion of our waste stream — growing almost 3 times faster than our overall municipal waste stream.

The CTBC hopes to accomplish this goal by establishing extended producer responsibility (EPR) as the policy tool to promote sustainable production and consumption of consumer electronics (all products with a circuit board). The Campaign has been focused first on establishing EPR for personal computers and peripherals. EPR will improve the next generation of solid waste and toxic materials policy, promote the manufacture of cleaner computers and curb the flow of toxic electronic waste by pushing manufacturers to take responsibility for their waste, internalizing its cost in corporate bottom lines, and phasing out the use of hazardous substances.

IV. REPORT CARD RESULTS

The Grades

The Report Card is issued to provide consumers with the information necessary to leverage their buying power and foster greater corporate responsibility for protecting public health, worker safety and the environment.

In past years the Computer Report Card evaluated the websites of companies that produce desktop or laptop computers, monitors, and/or printers. This year we tried something different, and sent surveys to the 28 companies whose websites we evaluated in the past. Fourteen companies responded and nine of those companies filled out the survey.

CTBC thanks these companies for taking the time to fill out the CTBC survey and sharing information on their company's environmental performance as value added for their customers.

The companies that completed the survey represent more than 50% of the U.S. sales in the desktop and laptop computer market. CTBC recognizes that companies with new programs are also taking a risk by filling out the survey and opening up the proverbial "can of worms" about environmental or health issues, even when they are making progress on solutions. As the phone calls we receive demonstrate, consumers want those specifics - both positive and negative.

This year the companies could earn a total of 100 points total in five categories. (For more detailed explanation see Survey scoring.)

- Computer TakeBack Program and Policies
- Toxics/labeling
- Information to Consumer about Recycling Programs
- Export/Recycling
- Environmental Health & Safety

The scoring was most heavily weighted toward the development of U.S. takeback services and policies and hazardous material phase-outs.

The European Union's (EU) Waste Electrical and Electronic Equipment (WEEE) and Reduction of Hazardous Substances (RoHS) Directives, both adopted by the EU's Parliament in October 2002, require the elimination of certain hazardous materials and set standards for producer responsibility for recycling and takeback. Since the U.S. does not have similar national takeback laws or regulations and recycling requirements, most companies have not taken the initiative to implement permanent policies in the U.S.

The CTBC Computer Report Card is meant to recognize those companies who are going beyond compliance with U.S. law and initiating takeback programs for their corporate and individual consumers. Almost all of the companies who responded to the CTBC survey have initiated a recycling program, however, the CTBC found these recycling services rarely have clear policies or published goals and targets.

The Beginners		Those Warming the Bench	
HP	54.5	Acer	0
Dell	52.5	AST	0
NEC	49.5	Brother	0
		Canon	0
		Daewoo	0
Those Trailing the Beginners		Epson	0
IBM	47.5	Fujitsu	0
Sony	42.5	Hitachi	0
Toshiba	40	Lucky Goldstar	0
Apple	37	Oki	0
Philips	34.5	Seiko	0
Lexmark	32	Samsung	0
		Sun Microsystem	0
Still at the Starting Gate		Viewsonic.	0
eMachines	0	Wyse Technologies	0
Gateway	0		

The Beginners:
HP, Dell, NEC Making a Start on the Thousand Mile Journey

Hewlett Packard
High Points: Publicly supports brand-owner takeback
Low Points: Unable to provide data on recycling rates

Hewlett Packard (HP) performed best across all categories, widening the point spread between its first place position and those following close behind (Dell and NEC) by actively supporting take back legislation in Maine and Minnesota.

HP very consistently and visibly stood for manufacturer responsibility and supported the Maine law. The company pledged to take responsibility for all HP-branded units and to take responsibility for a pro-rated share of the computers whose companies are no longer in business. HP could have expanded its lead further if it had provided data that compared the percentage of materials returned for recycling with the companies 2002-03 sales. Although HP said they recycle an average of 3.5 million pounds each month in the U.S., they do not currently track returned products against current sales numbers. HP also asserted that the company measures throughput by weight, and does not differentiate between HP products and its competitors' products that are processed at their facility. HP added, "Our recycling numbers appear significantly higher than those of others in our industry. It seems inconsistent with your 'grading' system to penalize a company for having tracking systems that were not designed to produce this metric."

HP's comments about inconsistency in our grading system are well-taken and serve to make the point that the industry does not have a uniform method to measure its environmental successes. For hundreds of years businesses have contributed to the creation of a standard set of accounting practices to measure profit and loss. Unfortunately, similar environmental measurements don't exist, and until companies and consumers demand a uniform set of standards for measuring environmental performance, the companies who are doing good work, risk not getting credit they deserve.

Dell

High Point: Support CTBC Statement of Principles for Producer Responsibility for Electronic waste. Also, most improvement in overall environmental performance

Low Point: Unable to provide or post air monitoring data for its facilities or its contractors

Dell successfully climbed from the bottom rung of last year's report card to the second place spot this year. This transformation was largely due to the company's launch of a domestic recycling program and elimination of prison labor for processing hazardous electronic waste. In particular, Dell will take back a printer of any make for free including pickup from one's home, when a consumer buys a Dell printer. Dell also scored extra credit points for indicating their support for CTBC's Statement of Principles.

Dell also reported that their 2003 recycling rate for individual consumer products equaled 3 to 5 percent of their total consumer sales and that their total recycling rate for their corporate customers was equal to 6 to 10 percent of their corporate total sales. (Most companies hovered below the 2 percent recovery rate or were unable to provide the requested data.)

However, if Dell is successful at keeping track of their recycling rates, they are less successful at providing environmental monitoring data. Dell lost points on the Environmental Health and Safety section of the survey, receiving 1 out of a possible 5 points because the company does not post their occupational illness rates reports on their web site, and because the company says its "factories consist only of light computer assembly and testing" and that they do not perform routine air monitoring for pollutants in all of its manufacturing facilities. Dell's inability to confirm that routine air monitoring occurs at all of its facilities as well as the facilities of contractors and suppliers that manufacture Dell components, cuts to the heart of environmental responsibility.

Most major U.S. manufacturers have shut-down or sold significant portions of their manufacturing facilities worldwide. Brand name computer companies, such as Dell, assemble component parts provided by a chain of suppliers who make the chips, disk drives and circuit boards, mold the plastics and produce internal working component parts. EPR requires the brand-owner to take responsibility for environmental monitoring, health and safety and worker rights, throughout its supply and disposal chains, in the same way that it monitors its suppliers for the benefits of cost and quality of its final product. Therefore, even though Dell doesn't manufacture the component parts themselves, the company should be able to confirm that routine air monitoring and environmental monitoring data is performed by all of its parts suppliers.

NEC

High Points: The only company to post 2004 re-use and recycling goals on their website

Low Points: Doesn't have a U.S. recycling program

NEC earned third place, despite the absence of a U.S. takeback program. NEC earned 28 of the total 35 points in the toxics section of the survey. The company earned consistent points for progressively phasing-out toxic chemicals banned by the European Union and for NEC's higher than average recycled content glass and plastic in its new products.

NEC was also the only company to publish its 2004 recycling goals on their website as well as goals for recycled contents, use of lead-free solder, global warming prevention and eco-labels for products. NEC claims to use lead-free solder in 50-100% of its products, while its top competitors HP and Dell, report that only 2 % of its products are lead free.

Unfortunately, NEC's U.S. consumers have absolutely no mail back option offered to them by NEC and there is no commitment from NEC to support a policy solution to require it, both serious failings.

For NEC's annual environmental goals see <http://www.nec.co.jp/eco/en/annual2003/03/0301.html>.

Those Trailing the Beginners

IBM

High Points: IBM invests in recycling facilities

Low Points: IBM not taking responsibility for legacy waste and is the leading opponent to state level e-waste producer responsibility policy

IBM, in fourth place, has invested in more than six recycling facilities in the US. Unfortunately, IBM is not committed to using these facilities to expand its recycling capacity to handle its extraordinary contribution to legacy waste.

IBM is shifting its business model away from selling PCs to providing services and support and unfortunately, is shirking its responsibility for recycling two decades of legacy electronic waste. IBM "believes the most effective and sustainable product recycling programs will be those in which costs for the collection, transportation and recycling of all products (including orphaned products) are financed through a nominal (\$5 to \$10) advanced recycling fee (ARF), a visible fee assessed at the point of sale on new product purchases. IBM asserts that such systems have proven to be effective, efficient, and have a relatively low cost."¹ However, under this scenario, the CTBC estimates a \$7.5 billion shortfall in ARF monies to handle the tidal wave of e-waste that will come out of storage and reuse cycles between 2006 and 2015. Local agencies, taxpayers and/or rate payers across the nation will inevitably pick up this huge difference in cost and IBM will avoid the liability for its significant share of historic waste.²

Sony

High Points: Phasing out Toxics

Low Point: Possibly uses prison labor

Sony reported 50-100% phase-outs in lead and earned the second highest score behind NEC in phasing out toxics.

Unfortunately, Sony could not confirm that the company doesn't use U.S. prisoners to recycle electronic waste. However, Sony executives at the recent 2004 Consumer Electronic show in Las Vegas, stated that the company contracts with Nxtcycle, a U.S. recycling company that utilizes prison labor for recycling.

Sony is getting off to a bad start by using the poorest and most vulnerable workforce in America for its hazardous waste recycling. Prisoners at a federal prison recycling factory in Atwater California have been exposed to excessive levels of known toxins including lead and cadmium in the workplace and experienced a toxic fire that burned more than 1000 television and computer monitors.¹ Prisoners are not fully protected by federal labor and occupational and health laws and they are not in a position to advocate for regulatory enforcement or to take action to protect their health or the environment.

Toshiba

High Points: Launching new recycling program

Low Points: Not much progress to report

Toshiba recently established a trade-in program that provides customers an opportunity to trade up to a new model. The old model may be refurbished/rebuilt and resold as “B” stock. Or the PC is recycled or properly disposed of, according to Toshiba.

Unfortunately, Toshiba’s low score reflects on the newness of their U.S. program and the lack of recycling information to report.

Apple

High Points: Supply Chain Audits

Low Points: No recovery data for recycling, aggressively opposed Maine’s producer takeback bill

Apple was one of the few companies to take the CTBC up on the offer to provide additional environmental and/or health information about the company that consumers will find useful and that we will help to disseminate. Apple provided a list of chemicals that it has banned from its products that aren’t on the RoHS list. Those chemicals include Arsenic, Chlorinated Solvents, Ozone Depleting Substances (Class 1 and 2), and several brominated flame retardants. In addition, Apple has initiated an ongoing supply chain audit program for its major supply chain partners in early 2003 to insure that its suppliers were in compliance with Apple’s banned material list.

Unfortunately, Apple isn’t as diligent when it comes to auditing the performance of its recycling partners. Apple could not provide information on its recycling rates in the US.

Philips

High Points: Uses recycled content glass and plastics

Low Points: Does not offer a U.S. take back program for retail customers

Philips received high points for its 6 to 11% recycled content glass and plastics and relatively high scores on toxic phase-outs. However, Philips does not currently have in place a program to take back computers and peripherals sold to individual (retail) consumers in the USA.

Lexmark

High Points: Launch a printer recycling program

Low Points: Proprietary micro chips discourage reuse of printer cartridges

We applaud Lexmark, primarily a printer manufacturer, for responding to the CTBC survey. Lexmark indicated that they have a corporate recycling program as well as an individual consumer recycling program, which is good news. Unfortunately, the CTBC survey was designed for computers and monitors, so Lexmark experienced a handicap in the scoring.

Lexmark’s use of a proprietary microchip that only allows remanufactured Lexmark cartridges to be reused in a

Lexmark printer, discourages reuse by restricting the burgeoning cartridge remanufacturing market. Lexmark has also filed legal action against toner remanufacturing companies.

Lexmark's "killer chip" is in direct opposition to common public policies aimed at reducing and eliminating waste.

Still at the Starting Gate

Panasonic and **Sharp** informed SVTC that they would not be participating in the survey because they felt the survey was designed for computers and both companies primarily manufacturer televisions.

However, with the convergence of computers with televisions as well as telephones, cameras, and other electronic devices, the CTBC will adjust the survey in coming years to accommodate manufacturers of computer peripherals.

Gateway and eMachines informed the CTBC that they are in the process of developing a recycling program for their customers.

The Bench Warmers:

Be Not Afraid of Going Slowly, Be Afraid of Standing Still

The following companies did not receive passing grades on last year's Computer Report Card and did not respond to the survey.

Acer
AST
Brother
Daewoo
Epson
Hitachi
Lucky Goldstar
Micron Electronics
Oki
Seiko
Samsung
Sun Microsystem
Viewsonic.
Wyse Technologies

Fujitsu and **Cannon** which earned first and second place respectively, in last years Report Card, did not return the survey this year.

Texas Instruments declined to fill out a survey because they make computer components and not computers.

V. EPR and the Thousand Mile Journey: A Step-by-Step Road Map for Beginners

Step 1. Take it Back Now

Once again Europe and Japan, are leading the way. The Waste from Electronic and Electrical Equipment (WEEE) Directive requires producer takeback of electronic equipment at the company's expense and limits

what can be done with those products. These limitations include a ban on sending them to developing countries and landfilling. Japan's takeback law has moved beyond household appliances to include computer products. South Korean and Taiwanese consumers have electronics takeback too. Consequently, companies are moving quickly to build recycling partnerships and infrastructure in these countries.

In the future, we will emphasize issues relating to transparency, tracking and supply and disposal chain management, which are key to EPR.

Step 2. Environmental and Social Justice: Protecting Human Assets

Most Americans don't know that 50 to 80% of the collected e-waste meant for recycling is quietly exported to countries where environmentally destructive processing and disposal create environmental and health nightmares.

Exports. In February 2002, the Basel Action Network (BAN) and Silicon Valley Toxics Coalition (SVTC) released the groundbreaking report, *Exporting Harm: The High-Tech Trashing of Asia*. It exposed the "escape hatch" that allows e-waste to be exported to China and other developing countries. As the report stated, "The open burning, acid baths, and toxic dumping pour pollution into the land, air, and water and exposes men, women, and children of Asia's poorer peoples to poison. The health and economic costs of this trade are vast and, due to export, are not borne by the Western consumers nor the waste brokers who benefit from the trade." (See *Exporting Harm* <http://www.svtc.org>)

More recent reports from India describe the environmental horrors caused by workers dipping circuit boards in plastic drums filled with acid, stripping the boards of their last remnants of copper and silver and dumping the spent acid into the open sewer lining, a rutted, dirt side-road. This is done by men who do not have the simple benefit of a mask or a pair of gloves to protect them from the noxious fumes from the toxic brew.¹

Although, all of the companies who participated in the CTBC survey confirmed that they were not shipping hazardous waste to China and other countries that are not members of the Organization of Economic Co-operation and Development (OECD)², the CTBC has no method in which to confirm these claims.

However, IBM stated that they do not send "hazardous waste to non-OECD countries, nor do their first tier suppliers send hazardous waste to non-OECD countries, but they do send materials to China for recycling.

Describing e-waste as a commodity that is going for recycling, rather than a hazardous waste is a tremendous loophole through which most of the hazardous waste flows from the U.S. shores to China and non-OECD countries. As reported in *Exporting Harm*, it is the unregulated recycling that is causing such devastation to the environment and human health in countries that don't have environmental regulations or enforcement.

U.S. Signing the Basel Agreement: The Basel Convention, ratified by all developed nations except the U.S., identifies CRTs, circuit boards, PCBs, mercury and anything containing them as hazardous and restricts the shipment of this hazardous waste from developed nations to developing ones, for recycling or disposal. Forty-four countries have also ratified the Basel Ban Amendment, which prohibits the hazardous e-waste from going to developing nations for any reason. Since the release of *Exporting Harm*, China has begun to clamp down on the imports of e-waste, but other countries are increasingly becoming targets for e-waste shipments.

Exploitation of U.S. Prison Labor: The U.S. prison population is among the poorest and most vulnerable workforce in the US. Incarcerated laborers, recycling hazardous electronic waste, under federal law are not considered employees, and do not receive full protections, rights and remedies available to U.S. employees.

Prisoners are not in a position to advocate for regulatory enforcement or to take action to protect their health or the environment. For example, prison workers recycling hazardous electronic waste at the federal penitentiary in Atwater California have been exposed to excessive levels of lead and cadmium in the workplace and experienced a toxic fire that burned more than 1000 television and computer monitors.

Seventy-three percent of the U.S. prison population are people of color who come from among the poorest communities most heavily exposed to environmental pollution and represent the highest health risk. The use of the prison population to recycle hazardous waste raises fundamental concerns about environmental justice and the fairness of environmental protection policies in the US.

Invest in recycling innovation. Export of electronic waste to poor countries and the use of prison labor in the U.S. stifles the innovation needed to actually solve the problem at its source — upstream at the point of design and manufacture. Thankfully, ethical recyclers and consumers recognize the need to stop the export of e-waste. Public pressure has pushed companies to begin creating their own limited domestic recycling infrastructure or establish partnerships with recyclers who do not send end-of-life electronic products overseas. A number of recyclers have signed CTBC's "Recycler's Pledge of True Stewardship," which includes a promise to follow environmentally sound practices and not to export e-waste.

(See Recycler's Pledge for True Stewardship http://www.computertakeback.com/the_solutions/recycler_s_pledge.cfm)

Step 3 Phase-out toxics

Lead. Consumer electronics constitute 40% of the lead found in landfills. As 315 million computers become obsolete between 1997 and 2004, nearly 1.2 billion pounds of lead could potentially enter the waste stream. Lead is particularly dangerous when ingested by breathing in fumes (while melting, working with, or recycling the material) or through drinking water. When products containing lead are landfilled, the leachate threatens surrounding communities and water sources. CRT monitors and televisions, contain up to eight pounds of lead in the glass. Monitors fail EPA's leachate toxicity tests and are classified as hazardous waste when they are disposed of in landfills. California, Maine, Minnesota and Massachusetts prohibit their disposal in landfills. Modified leachate toxicity tests are currently being undertaken on circuit boards, laptops, mice, keyboards and other computer components to determine the threat to landfills.

Where the use of lead is concerned, once again the U.S. is lagging behind in protecting environmental and community health. No directives on eliminating lead from products have been brought forth by national government agencies. Australia, on the other hand, has already demonstrated that what electronic equipment fails the leachate test for lead and has set restrictions on e-waste disposal accordingly. In Europe, the RoHS Directive requires the elimination of lead from electronic equipment, with some exceptions, by 2006. Some companies - particularly those based in Japan — recognize the dangers of lead. From Seiko Epson's 2001 environmental report, "Lead is highly soluble in acid rain, and is subsequently prone to entering and polluting groundwater."

Brominated Flame Retardants. BFRs are used in the plastic housings and circuit boards of electronic equipment to prevent fires. There are four major types— polybrominated biphenyls (PBBs), tetrabromobisphenol-A (TBBPA), polybrominated diphenyl ethers (PBDEs), and hexabromocyclododecane (HBCD) in this family of 209 chemicals. BFRs are suspected endocrine disrupters, chemicals that cause a hormone imbalance by out-competing or mimicking the body's natural hormones.

Specific effects of exposure to endocrine disruptors include decreased period of lactation, infertility, and intellectual impairment in children. These chemicals make computer recycling particularly hazardous to workers. According to several studies, both TBBPA and several forms of PBDEs have been detected in the air at several electronics recycling plants in Sweden, and have been monitored in the blood of recycling workers.

Research reveals PBDEs in breast milk of every American woman tested and that levels of PBDEs in human breast milk are doubling every five years.¹

Assessment of Alternatives to Toxics: Despite the improvements, it must also be noted that the information on BFRs can be misleading and the degree of phase out can be unclear. Moreover, while a number of companies have eliminated specific BFRs in anticipation of the EU's directive, most companies are not disclosing the chemical replacements. For example, Canon eliminated the use of PBB and PBDE in 1989, as have HP and Dell. Lexmark eliminated PBB and PBDE in some of their laser printers and circuit boards. They have not disclosed, however, the replacement chemicals, so it is impossible to know whether they are safer.

When plastics are replaced with non-combustible metal, the product can be safer. When another BFR, such as TBBPA, is the alternative or substitute chemical, the potential health effects could still be serious. The question of BFR usage in parts or products continues to be a serious concern, especially in circuit boards. Many consumers, however, are confused or under the mistaken impression that they are buying a product that does not contain these harmful chemicals.

Step 4. Monitoring Occupational Health and Safety Including Prolonged Exposure to Toxic Chemicals

Quantitative data on exposure is lacking on occupational health issues. Workers who produce semiconductor chips, circuit boards, disk drives, and other electronic components are exposed to highly toxic chemicals. This year the report card asked basic questions about companies' policies and procedures on tracking the incidence rate of occupational illness in the workforce. Almost all of the companies said they track incidence of days of work lost due to illness or injury and several post this information on their website. However, there is no discussion of the types of injuries or illnesses. Other companies, while declaring a commitment to maintaining safe workplaces, provide no details about monitoring worker health.

Beyond Compliance: The CTBC believes differentiation **MUST** be made between acute injuries (slips and falls), chronic injuries (ergonomic), acute illness (short-term exposure from a chemical accident), and chronic illness (due to long-term chemical exposure). Few companies mention cancer, reproductive problems, high rates of miscarriages and birth defects, which have been linked to industrial practices. Some companies whitewash health issues by highlighting employee benefits such as ergonomic measures and smoking cessation programs. This obscures the more serious issues of debilitating illnesses from chemical exposures.

Health Impact from Exposure to Chemicals: There is emerging recognition that the health concerns deserve more attention. Research has uncovered studies and incidences of worker illnesses that shed light on the problems within electronic industry workplaces.

Workers are beginning to speak out. Hundreds of high-tech production workers from New York, Vermont, Minnesota and California have filed lawsuits against IBM and chemical suppliers, claiming that chemical exposure at their workplaces caused serious illnesses. IBM's responded that while the company "sympathizes with anyone who develops a serious medical problem and addresses questions like these very seriously, the company believes that these lawsuits are without merit."

VI. CONCLUSIONS

The Computer TakeBack Campaign is encouraged by Dell, Inc.'s and HP's indication of support for the Statement of Principles, HP's strong support of state-level producer responsibility legislation, as well as progress by several companies to launch or expand product recycling programs. However, the fact remains that most of these changes are being driven by policy and consumer pressure. Policies at the state and local levels are key to raising the rate of electronics recycling above the 2 to 20% range. Policy must create a level playing field that sets goals and timetables and allows the companies to use their ingenuity to determine how they will meet those goals.

Superior environmental performance requires transparency, supply chain management in manufacturing and recycling and rewards for companies that go beyond compliance and push the envelope in creating value for their customers in the environmental performance of their products.

This year's CTBC Report Card found that the companies need to improve the following:

- We need to put an end to global double standards and offer effective takeback programs, worker health protections, and environmentally sustainable products to all consumers, regardless of regulations or the lack of them in particular regions of the world. The U.S. continues to be an international laggard but is beginning to show signs of closing the gap.
- We need to establish effective and sustainable producer takeback policies in place throughout the U.S. Since environmental gridlock and a climate of rollbacks currently exists in Washington D.C., these policy initiatives must be pioneered at the state level. Manufacturers must exercise their political muscle and work with environmental and public health advocates to accomplish this goal until eventually the Bush Administration or its successor embraces the producer responsibility approach.
- The most critical current challenge is the development of a fair and effective method of financing of the collection and processing of both the historic ("legacy") e-waste as well as a system that will guarantee sustainable solutions to new products currently coming onto the market (future e-waste).
- Companies need to develop efficient tracking systems for occupational health and safety that differentiate between acute injuries (slips and falls), chronic injuries (ergonomic), acute illness (short-term exposure from a chemical accident), and chronic illness (due to long-term chemical exposure) and which document incidents of cancer, reproductive problems, high rates of miscarriages and birth defects, which have been linked to industrial practices.
- We need to create a standard set of environmental measurements for recycling, toxic reduction, supply chain management and auditing so that companies can avoid the charge of green-washing and the companies who are doing good work can be acknowledged and rewarded in the market place. While it is clear that there has been measurable progress during the past year in response to the significant pressures on the companies, the fact remains that even the companies that have started consumer take back programs are still only recycling about 2% of their products when compared to current sales. Until these rates increase dramatically, the volume of legacy e-waste will continue to increase rather than decrease.
- Likewise, there needs to be effective and transparent tracking systems and supply chain management for recycled materials. Supply chain management for recycled materials and tracking systems provide transparency and accountability that is currently not available.

VII. TAKE ACTION

The CTBC is working to promote Extended Producer Responsibility, reductions in hazardous materials used in electronics, worker safety, and more transparency about corporate policies. We need the help of all computer users to attain these goals.

It's Time to Get Involved

Here are just a few suggestions on what you can do:

1. **Use your purchasing power to send a message** that only responsible companies deserve to earn your business. Choose products from those companies who are responsive to the public and participated in our Computer Report Card.
2. **Call, write, or e-mail the manufacturer of your computer**, printer, monitor, etc. and ask them about the hazardous materials in their products and their takeback policies. Specifically ask if they use prison labor, send e-waste overseas, or are sure that any outside recyclers they contract with don't follow these practices.
3. **Support and become active** in the in the CTBC. Sign up at the campaign web site to receive updates.
4. **Support local organizations** participating in the CTBC.
5. **Help introduce or support legislation or regulations** that will build recycling infrastructure, ban landfilling and incineration of e-waste, build computer recycling infrastructure, outlaw export of e-waste, and require reductions in hazardous materials, especially lead, BFRs, and PVCs.
(See states introducing EPR legislation http://www.computertakeback.com/legislation_and_policy/e_waste_legislation_in_the_us/index.cfm)
6. Participate in our efforts to **pressure companies through shareholder action**. If you, your union, or employer own stock in computer companies, support resolutions filed by socially responsible investment firms.
7. Lobby your university, mutual fund or pension plan to support shareholder resolutions if they invest in computer producers.
8. Get your company, university or organization to use their purchasing power to buy environmentally preferable equipment and to press for takeback programs. (See Green Computer Purchasing Guidelines <http://www.noharm.org/goingGreen>)
9. If you make IT purchases, or recommendations of purchases for a company, agency, or institution, **demand takeback provisions in sales contracts**.
10. Encourage organizations to **endorse and become active** in the campaign.

Acknowledgments: Thanks to SVTC Staff Sheila Davis and Leslie Byster for fact checking and writing the report, and to CTBC coordinators Robin Schneider, Ted Smith, David Wood, Michael Picker for their editorial help.

VIII. Appendices

Appendix A: Statement of Principles on Producer Responsibility for U.S. Electronic Waste

Statement of Principles on Producer Responsibility for U.S. Electronic Waste May 7, 2004

We support the policy of producer responsibility in the U.S. for electronic products at the end of their useful lives, wherein brand-name manufacturers/producers work with consumers and state and local governments to properly collect and manage electronic products in an environmentally responsible fashion. Manufacturers and producers accept responsibility for continually improving the environmental aspects of the design of their products and for the end-of-life management of their products. This policy will have many benefits for consumers, electronics producers, local governments, the public health and the environment.

This statement refers to the responsibility for the environmentally responsible management of the electronic waste from products sold to all customers in the future. As for products sold in the past (“legacy” electronic waste, including “orphan” products for which the relevant producer/brand owner is no longer in business), we advocate that all due measures should be taken to allocate primary responsibility to those who manufactured and sold these products in the first instance. For that orphan waste which cannot be allocated to past producers, we support the principle that current electronics producers as well as those entering the market in the future should share in the responsibility of managing this electronic waste based on an equitable cost allocation related to historic market share. [See point 3 of alternative policy section below]

We support the objective of producer responsibility to create incentives for producers to improve the design of their products to minimize their life-cycle impacts on the environment. In particular, we support activities designed to:

- Phase out the use of potentially hazardous substances consistent with the recent European ROHS directive and other worldwide standards as they become law;
- Improve options to upgrade equipment over the course of the equipment’s life; and
- Increase the integration of non-hazardous recovered materials into new products.

We believe that producer responsibility can operate most effectively through the competitive marketplace, but that all stakeholders – consumers, producers, governments, and the general public — play an important role. All stakeholders need assurances that all producers are held to the same high environmental standards. Therefore, we support a public policy framework in the U.S. that provides for individual producer responsibility, through mechanisms that assure proper end of life management of producers’ own products sold in the future. It is expected that individual producers may choose to cooperate with others in carrying out this responsibility in order to achieve efficiencies of scale.

We do not advocate an “advanced recovery fee” approach to financing the management of electronic waste, such as has been adopted through SB20 in California and which is under consideration within the National Electronic Product Stewardship Initiative process. We support an alternative financing model which allows for responsible companies to avoid an Advanced Recovery Fee and provides for cost internalization of end of life management costs by producers for new products entering the marketplace combined with industry sponsored programs designed to offset the incremental costs borne by local governments and others to collect discarded electronic products.

We recognize that in order to be viable and effective, this preferred alternative policy approach includes:

1. ambitious, workable and progressive goals and timetables to assure that both legacy and future electronic waste will be properly recovered and managed;
2. effective and enforceable environmental standards to assure that hazardous electronic waste will be properly managed in strict compliance with international and domestic laws that govern export of hazardous electronic waste, worker safety, public health and environmental protection, and the use of market labor rather than incarcerated labor;
3. a convenient, fair and equitable system of collection that does not create economic disincentives for consumers to participate and is premised upon financial participation by producers so that taxpayers, local governments, or others do not shoulder all the financial burdens of recycling and disposing of electronic products. (Large institutions whose electronic waste is regulated by federal law may be subject to fees to cover the costs of proper recycling and disposal of their historic waste.)
4. consumer awareness designed to optimize performance of the system;
5. flexibility for producers to design and implement recovery and recycling systems that best suit their particular business model while complying with all applicable laws.

Appendix B: Group Backgrounds and Contact Information

Clean Computer Campaign. The Clean Computer Campaign, a program of the Silicon Valley Toxics Coalition (SVTC), is working to clean up the computer lifecycle by drawing attention to the hazards computer equipment poses to the consumer, community and workers involved in the manufacturing, use and disposal of obsolete computers. At the same time, the campaign promotes take-back and extended producer responsibility to help solve the problems of the ever-escalating mountain of “end-of-life” electronic products. SVTC was formed in 1982, and for more than 20 years has worked to improve the environmental and occupational health and safety practices of the high-tech electronics industry while at the same time urging greater corporate and governmental responsibility and accountability.

Computer TakeBack Campaign. The Computer TakeBack Campaign (CTBC) is a collaboration with a broad-based network of organizations many of which have been working on sustainable production and consumption, as well as community-based recycling, for many years. The focus of the campaign is to establish sustainable and responsible practices within the electronics industry throughout the entire product chain. This is one of the largest and most critical campaigns undertaken in the United States and the global marketplace.

Groups involved in the Campaign include:

- Basel Action Network www.ban.org 206.652.5555 Sarah Westervelt swestervelt@ban.org
- Clean Production Action 514.484.8647 Beverly Thorpe BevCPro@aol.com and 716.655.1860 Alexandra McPherson alexandra@cleanproduction.org
- Clean Water Fund www.cleanwateraction.org, 608-338-8131 Kara Reeves kreeve@cleanwater.org
- Center for Environmental Health www.cehca.org 510-594-9864 (x109) Mamta Khanna mamta@cehca.org
- Communications Workers of America www.cwa-union.org 202.434.1187 George Kohl gkohl@cwa-union.org
- ecopledge.com www.ecopledge.com 213.251.3690
- Environmental Advocates of New York 518.462.5526 Dave Higby dhigby@eany.org
- Environmental Health Strategy Center, 207-827-6331, mbelliveau@preventharm.org
- Friends of the Earth www.foe.org 202.783.7400 Mark Helm mhelm@foe.org
- GrassRoots Recycling Network www.grrn.org 608.255-4800 David Wood david@grrn.org
- INFORM www.informinc.org 212.361.2400 Sarah O'brien obrien@informinc.org
- Institute for Local Self- Reliance www.ilsr.org 202.232.4108 Neil Seldman nseldman@ilsr.org
- Natural Resources Council of Maine, 207-622-3101, jhinck@nrcm.org
- Silicon Valley Toxics Coalition www.svtc.org 408.287.6707 Ted Smith tsmith@svtc.org, Sheila Davis sdavis@svtc.org

- Society Promoting Environmental Conservation Helen Spiegelman hspi@telus.net
- Texas Campaign for the Environment www.texasenvironment.org 512.326.5655 Robin Schneider robin@texasenvironment.org
- Vermont Public Interest Research Group 802.223.6855 Paul Burns paul@vpirg.org
- Washington Citizens for Resource Conservation suellen@wastenotwashington.org, 206.441.0790 Suellen Mele.

In addition to the campaign participants, socially responsible investors coordinate e-waste dialogues with companies, as well as shareholder resolutions. These include:

As You Sow Foundation, www.asyousow.org, Conrad MacKerron mack@asyousow.org
 Calvert Group, www.calvertgroup.com, Julie Frieder julie.frieder@calvert.com
 Paxworld, www.paxworld.com, Anita Green agreen@paxworld.com,
 ISIS, www.isisam.com, Claudia Kruse Claudia.Kruse@isisam.com, Elizabeth.McGeveran@isisam.com,
 US Trust, www.ustrust.com, Ken Scott kscott@ustrustboston.com,
 Green Century Fund, www.greencentury.com, Michael Leone mleone@greencentury.com,
 Dreyfus Fund, www.dreyfus.com, Paul Hilton hilton.pa@dreyfus.com,

APPENDIX C: CTBC Chronology

CTBC Chronology

- | | |
|----------------|--|
| November 2001 | “Computer Report Card,” simultaneous multi-city media releases, extensive media coverage |
| February 2002 | “Exporting Harm” report and video released, generating global media coverage |
| March 2002 | GRRN/ecopledge.com “Dude, why won’t they take back my old Dell” report; postcarding and visibility at Austin, TX Rolling Thunder event; TCE joins campaign |
| May 2002 | Dell announces program allowing consumers to mail back, at their own cost, used equipment to Dell for recycling; Dell’s program is a partnership with UNICOR, the federal prison industries |
| June 2002 | Dell requests and meets with CTBC representatives in Austin. Dell assigns public relations person as key contact |
| July 2002 | Dell’s annual shareholder meeting, including multiple questions from the floor about take back programs; TCE meets face to face with Michael Dell where he tells them he has not seen the consumer demand for take back programs |
| September 2002 | National Recycling Coalition conference in Austin, TX; launch of www.toxicdude.com student organizing web site; Dell requests and meets with CTBC leadership at Dell headquarters |

September – October 2002	SRI dialog process commences, Dell's commences mail-back program; Dell drops Steven the Dude advertising campaign
January 2003	CTBC visibility actions at International Consumer Electronics Show in Las Vegas, release of Computer Report Card, launch of www.computertakeback.com ; Dell requests and meets with CTBC leadership; Dell, other manufacturers team up with EPA in voluntary Plug Into E-Cycling program
February 2003	CTBC launches state policy strategies in 10 states; release of Recycler's Pledge of True Stewardship and media coverage of both initiatives. Dell introduces new VP of Sustainable Business position to coordinate aspects of e-waste and sustainable business practices.
March 2003	Dell expands PR team to include GCI (Gray Communications), EnviroMedia; Dell partners with National Recycling Coalition and announces one-day collection events in 5 cities; Dell starts marketing Dell-branded printers and offers to take back a printer for free
April 2003	Dell's initial one-day collection events
May 2003	Dell extends one-day collection events to 10 more cities (May – July)
June 2003	SVTC, CTBC release "Tale of Two Systems" report, comparing and contrasting Dell's use of prison labor for recycling with HP's contract with MicroMetallics, a free market firm; national media coverage re: use of prison labor for electronics recycling
July 2003	<p data-bbox="553 1182 1511 1245">One week following release of "Tale of Two Systems" report, Dell announces that it will drop its prison recycling partnership</p> <p data-bbox="553 1287 1511 1549">CTBC begins Hard Drive Across the West e-waste collection tour in Seattle with events in 5 cities before its arrival in Austin for E-waste Town Hall Meeting and Dell's 2003 Annual Meeting. CTBC questions Michael Dell at shareholder meeting; Dell ends relationship with prison system; announces new equipment recovery program requiring consumers to pay a significant back-end fee to recycle their obsolete equipment, offers limited time 99 cents recycling offer around the time of the Annual Meeting</p>
September 2003 – May 2004	CTBC communicates to Dell the essential elements of its bottom line, commencing discussion with company management around the principles of extended producer responsibility and the details of measuring the company's progress toward producer responsibility
November 2003	CTBC leaders Robin Schneider, Ted Smith and David Wood meet with Dell's management team responsible for legal affairs, product recovery and recycling, environmental design, and sustainability.

- December 2003 CTBC leaders Robin Schneider, Ted Smith and David Wood meet in person with Michael Dell at the company's headquarters in Austin, TX to discuss the Campaign's goals and his company's progress and plans.
- GrassRoots Recycling Network takes out full page ad in weekly *Austin Chronicle* on behalf of 153 college student organizations from all 50 states, publishing an open letter to Michael Dell calling on him to declare his company's support for the "Take it Back, Make it Clean, Recycle responsibly" platform.
- January 2004 Michael Dell, in his speech at the 2004 Consumer Electronics Show, spends 7 minutes of the prepared 42 minute remarks talking about environmental impacts of consumer electronics, product recycling, the EU's RoHS Directive, and the programs in place (and in planning) at his company to begin addressing the e-waste issue.
- April 2004 Michael Dell issues an open letter public response to the campus organizations that targeted him in the December 2003 *Austin Chronicle* ad, posting his letter to the company's web site. The letter specifically references several new product takeback initiatives, including a planned old-for-new free of charge consumer product recovery program.
- Michael Dell and GRRN organize and hold an hour long, live teleconference and webcast giving college students from around the country the opportunity to engage directly with the CEO; students from 40 campuses participated in the teleconference.
- Governor John Balacci of Maine signs into law the country's first law requiring manufacturers and brand owners to take responsibility for discarded video display devices, after successful lobbying by HP, the Natural Resources Council of Maine, the Environmental Health Strategy Center, and a statewide coalition.
- May 2004 HP and Dell indicate their support for and agreement to a negotiated version of the Statement of Principles for Producer Responsibility.
- CTBC's 5th Annual Report Card shows HP and Dell finishing in the first and second spots, respectively, with NEC following in third position. Report card highlights progress made by a small number of leading companies, HP's active support for state level EPR policy, and Dell and HP's support for the negotiated Statement of Principles.

APPENDIX D: Computer TakeBack Platform

Take It Back

Financial and/or Physical Responsibility.

Manufacturers and distributors of electronic equipment must take financial and/or physical responsibility for their products throughout the entire product lifecycle, including in particular take-back and end-of-life management. This responsibility must include:

Reduced use of hazardous materials in manufacturing; collection, disassembly, reuse and recycling of discarded computer equipment to the highest degree practicable; and requirements that recycling is done in an environmentally sound manner.

Infrastructure development.

EPR will foster development of effective, environmentally sound and sustainable infrastructure for collection, re-use, remanufacturing and recycling of electronic equipment.

Stop hazardous waste exports.

The federal government should ban exports of hazardous materials from discarded electronic waste equipment.

Taxpayer relief.

We oppose efforts to force taxpayers to pay for electronic waste collection, recycling and disposal through local government initiatives, such as household hazardous waste programs.

Community re-investment.

The recycling infrastructure developed under an electronics “take back” system should support local economic development in domestic reuse, re-manufacturing and recycling processing systems.

Internalize costs.

EPR internalizes “end-of-life” management costs in the price of electronic equipment by shifting the burden from taxpayers to industry, so that those with effective “take-back” and recycling programs are not put at a competitive disadvantage.

Recycling Goals.

The electronics industry should meet aggressive recycling goals and implement methods for tracking and publicizing success.

Make It Clean-

Adopt the Precautionary Principle.

Where there is a threat to health or the environment, a precautionary approach requires taking preventive action even before there is conclusive scientific evidence that harm is occurring. The federal government should develop and implement strict protocols for testing chemicals and mixtures before they are introduced into the markets.

Phase out hazardous materials.

The electronics industry should end the use of chemicals that are dangerous to human health or the environment (including lead, mercury, cadmium, brominated flame retardants, chlorinated solvents, and other hazardous materials).

Proper handling of hazardous materials.

Manufacturers of electronic products should protect workers, the public and the environment from hazardous materials until safer substitutes are developed and used.

Design for the environment.

Manufacturers of electronic products should develop and use safer, less toxic materials; design for durability, upgradability and disassembly; avoid designing disposable products; and reduce consumption of water and energy resources throughout the product lifecycle.

Closed-loop recycling.

The electronics industry should design products to be easily repaired and upgraded to extend their useful life; incorporate recycled content and remanufactured components into new products; and develop closed loop materials cycles.

Zero Waste

The goal is to ban all discarded electronic equipment from going to landfills or trash incinerators and to end environmentally unsound recycling practices.

Fair Labor-

Protect workers health and safety.

The electronics industry should apply stringent occupational health and safety standards to manufacturing and recycling facilities throughout the product chain; eliminate exploitation of workers in prisons and within manufacturing facilities throughout the world; and end unsafe labor practices.

Fair pay.

The electronics industry should institute livable wages for all workers throughout the product chain, including subcontractors.

The right to organize

The electronics industry should recognize the rights of workers to organize at electronic equipment manufacturing plants and recycling facilities throughout the product chain.

Appendix E: Methodology, Questionnaire and Scoring System

2003 Computer Report Card Survey Questions

(Prepared by the Silicon Valley Toxics Coalition, Clean Computer Campaign and the Computer TakeBack Campaign)

For purposes of this survey, "Take Back" is defined as brand name manufacturers and distributors of electronic equipment taking financial and/or physical responsibility for their products throughout the entire product lifecycle, including in particular appropriate take-back and end-of-life management.

1. Does your company currently have a program in place to take back computers and peripherals sold to major customers (government, corporate, institutional) in the USA?

Yes_____

No_____

(Total 5 points)

1a. If yes, what percentage of your company's products were returned in the USA during 2002 for reuse or recycling through your major customers take back system, when compared to your 2002 sales?

<2%=0

3-5 % =1

6-10 %= 3

11-25 %= 5

26-50 % = 7

51-100 % = 8

Don't know=0

(Total 8 points)

2. Does your company currently have in place a program to take back computers and peripherals sold to individual (retail) consumers in the USA?

Yes ___

No _____

(Total 5 points)

2a. If yes, what percentage of your company's products were returned in the USA during 2002 for reuse or recycling through your retail customers take back system, when compared to your 2002 sales?

<2% =0

3-5 % =1

6-10 %= 3

11-25 %= 5

26-50 % = 7

50-100% = 8

Don't know=0

Fail/refuse to answer=0

(Total 8 points)1 point for 3-5% and escalating points for each incremental increase.

3. Has your company established any product re-use or recycling goals for 2004?

Yes ___

No _____

(Total 5 points) 3 point for statement an dates.

2 Points for goals published on website, report etc.

4. Does your company (or any of its contractors) export hazardous electronic waste to non-OECD countries?

Yes _____

No _____

Don't Know _____

(Total 2 points)

Clarify questions. "Does you company (or any of its contactors) export hazardous electronic waste to non-OECD countries in accordance with the Basel Agreement?"

5. Does your company publicly support state or federal legislative efforts to require brand owners and producers of computers and consumer electronics to bear financial responsibility for the collection and safe recycling of their products?

Yes _____

No _____ Please explain your response and provide your policy, for posting on our website.

(Total 15 points)7 point for yes and a position. 3 points for a published position statement (report, website etc)

6. Does your company inform consumers about the hazards of computer waste and the need for proper management of obsolete computer equipment through any of the following means?

- a). Website with prominent link on homepage_____ (if so, please provide the url)
- b). Website without link on homepage _____ (if so, please provide the url)
- c). Newspaper ads _____ (if so, please specify which ones)
- d). Radio and/or TV ads_____ (if so, please specify which ones)
- e). Notices available at point of sale_____ (if so, please provide examples)
- f). Email notification to customers_____ (if so, please provide examples)
- g). Labels on the computers _____ (if so, please provide examples)
- h). Other (please explain)_____ (if so, please provide examples)

(Total 6 points) 2 points for paid tv or radio ads and 1 point for all other venues

7. Does your company have a link on your home page to environmental information relating to your products, company policies and/or company practices?

Yes_____

No_____ (if so, please provide the url)

(Total 1 point)

8. Starting from your company's web site home page, what is the fewest number of pages someone must click through to obtain information about your company's equipment recovery and recycling programs?

1 _____=3

2 _____=2.5

3 _____=2

4 _____=1.5

5 _____=.5

More than 5 _____

(Total 3 points).5 point for each increment

9. Does your company own a recycling operation or does your company participate in a joint operating agreement with a recycling operation(s) in the USA?

Yes _____

No _____

Don't Know_____

9a. If yes, how many and at what location(s)?

9b. What was the total volume of materials recycled at these locations in 2002?

(Total 2 points) 2 points if the company provide information that can track products or account for the final deposition in a responsible fashion.

10. Does your company (or its recycling contractors) use prison labor in the United States, whether federal, state, local or private prison inmates to recycle your computers?

Yes _____

No _____

Don't Know _____

(Total 1 Point)

11. Does your company have policies and procedures on how you track the incidence rate of occupational illness in the workforce?

Yes _____

No _____ (if yes, please provide copies)

(Total 2 points) 1 point for policy, 1 point for published policy

11a. (if yes, please provide copies)

12. Are your occupational illness rates and reports posted on your web site?

Yes _____

No _____ (if yes, please provide the url)

(Total 1 Point) for posting on website

13. Does the company perform routine air monitoring for pollutants in all of its manufacturing facilities?

Yes _____

No _____ (if yes, please provide copies of policies and procedures describing this monitoring)

(Total 2 points) 1 point, 1 point for posting on website

14. What percent of the following recycled materials are currently used in your company's new computers and peripherals (include all modes)? Please detail by:

Plastics:

a. 0-5%=0

b. 6-10%=1

c. 11-20%=2

d. 21—40%=3

e. 41-60%=4

f. 61-80%=5

g. 81-100%=8

(Total 8 points) 1 point for 6-10 percent and 1 point for each incremental increase. Industrial regrind doesn't count.

14b. CRT glass:

- a). 0-5%=0
- b). 6-10%=1
- c). 11-20 %=2
- d). 21-40%=3
- e). 41-60%=4
- f). 61-80%=5
- g). 81-100%=6

(Total 6 points) 1 point for 6-10% and an additional point for each incremental increase

14c. Please provide equipment name(s) and model number(s) and recycled material information for your brand's equipment with the highest percentage of recycled plastic and CRT glass.

15. What percentage of your company's 2003 products have phased out the following materials (as defined by the EU Restriction on the use of Hazardous Substances (ROHS) directive)?

15a. Polybrominated Diphenyl Ethers (PBDEs)

- a) <2% =0
- b) 3-5 % =1
- c) 6-10 %=2
- d) 11-25 % =3
- e) 26-50 %=4
- f) 50-100 %=5

(Total 5 points) 1 Point for each increment

15b. Lead

- a) <2%=0
- b) 3-5 % =1
- c) 6-10 %=2
- d) 11-25 %=3
- e) 26-50 % =4
- f) 50-100 %=5

(Total 5 points) 1 point for each increment

15c. Mercury

- a) <2% =0
- b) 3-5 % =1
- c) 6-10 % =2
- d) 11-25 % =3
- e) 26-50 % =4
- f) 50-100 %=5

(Total 5 points) 1 Point for each incremental increase

16. Does your company have policies that include goals and timetables for phasing-out the above materials?

Yes _____

No _____

16b. If yes, please provide a list of products that already meet ROHS requirements and we will post them on our websites.

(Total 2 Points)

17. Will *only* ROHs compliant electronics designed to meet guidelines in the EU be sold in the U.S. after the effective date?

Yes _____ No _____ Don't Know _____

(Total 2 Points)

18. Does your company have products that meet TCO Development, Blue Angel or Nordic Swan labels?

Yes _____ No _____ Don't Know _____

18.b If so, please provide model name(s) and number(s). We will post them on our websites.

(Total 2)

1 point if under 50% of the company's total products meet TCO, Blue Angel etc. 2 points if more than 50% of products have labels.

19. If you would like to provide additional environmental and/or health information about your company that consumers will find useful, we will help to disseminate it. You must fill out and return this survey, however, in order to qualify for this service.

APPENDIX F: Computer Company URLs

Acer

<http://global.acer.com/about/manufacture.html>

<http://global.acer.com/products/index.asp>

Apple <http://www.apple.com/about/environment/>

AST <http://www.ast.com/>

Brother <http://www.brother.com/environment/>

Canon <http://www.canon.com/environment/>

Compaq <http://www.compaq.com/corporate/ehss/>

Dell

http://www.dell.com/us/en/gen/corporate/vision_envIRON.htm

http://www.dellfinancialservices.com/solutions/asset_recovery.asp

e-Machines <http://www.eMachines.com/>

Fujitsu <http://eco.fujitsu.com/en/>

Gateway

<http://www.gateway.com/home/programs/tradein.shtml>

http://www.gateway.com/home/programs/tradein_recycle.shtml

Hewlett - Packard

<http://www.hp.com/hpinfo/community/environment/main.htm>

<http://warp.external.hp.com/recycle/>

Hitachi http://www.hitachi.co.jp/Div/kankyo/khoukoku/index_e.htm

IBM <http://www.ibm.com/ibm/environment/index.phtml>

Lexmark

http://www.lexmark.com/corporate/env_backgrounder.html

<http://www.lexmark.co.uk/uk2/environment/winning3.htm>

Lucky-Goldstar <http://www.lge.com/index.jsp/>

Matsushita/Panasonic <http://www.matsushita.co.jp/environment/en/index.html>

Micron <http://www.micron.com/content.jsp?path=/About+Micron/Policies/>

NEC <http://www.nec.co.jp/english/profile/kan/index.html>

Oki

<http://www.oki.co.jp/OKI/Home/JIS/Profile/ECO/index.html>

<http://www.oki.co.jp/OKI/Home/English/Profile/ECO/>

Philips <http://www.environment.philips.com>

Samsung http://www.samsungelectronics.com/esh_report/system/system_index.html

Seiko Epson <http://www.epson.co.jp/e/ec/main.html>

Sharp

<http://www.sharpelectronics.com/about/AboutEnvironment/0,1331,,00.html>

<http://sharp-world.com/sc/environ/index.html>

Sony <http://www.sony.co.jp/en/SonyInfo/Environment/>

Toshiba <http://www.toshiba.co.jp/env/english/>

Viewsonic <http://www.viewsonic.com/companyinfo/qualityiso.htm>

Wyse <http://www.wyse.com/products/index.htm>

¹ See Appendix A for list of participating organizations. Also, see www.computertakeback.com for complete information about the Computer TakeBack Campaign.

² *Test of Manufacturer Mail-Back Programs*, Snohomish County (WA) Solid Waste Management Division, January 2004.

³ *Poison PC's and Toxic TVs – E-waste Tsunami to Roll Across US: Are We Prepared?*, Computer TakeBack Campaign, February 2004

⁴ <http://www.svtc.org/cleancc/pubs/ppcttvcover2004.pdf>

⁵ http://www.computertakeback.com/the_solutions/recycler_s_pledge.cfm

⁶ IBM response to CTBC survey question 5(see survey in appendix—

⁷ *Poison PC's and Toxic TVs: E-waste Tsunami About To Roll Across America*, 2004, <http://www.svtc.org/cleancc/pubs/ppcttv2004execsum.htm>

⁸ *Merced Sun Star*, November 3, 2003

⁹ *San Jose Mercury News*, December 28, 2003

¹⁰ The OECD plays a prominent role in fostering good governance in the public service and in corporate activity among its 30 member countries. It helps governments to ensure the responsiveness of key economic areas with sectoral monitoring. However, large volumes of e-waste are still going to non-OECD countries.

¹¹ <http://www.svtc.org/cleancc/pubs/ppcttv2004.pdf>

