

A Greener Apple

Apple has been criticized by some environmental organizations for not being a leader in removing toxic chemicals from its new products, and for not aggressively or properly recycling its old products. Upon investigating Apple's current practices and progress towards these goals, I was surprised to learn that in many cases Apple is ahead of, or will soon be ahead of, most of its competitors in these areas. Whatever other improvements we need to make, it is certainly clear that we have failed to communicate the things that we are doing well.

It is generally not Apple's policy to trumpet our plans for the future; we tend to talk about the things we have just accomplished. Unfortunately this policy has left our customers, shareholders, employees and the industry in the dark about Apple's desires and plans to become greener. Our stakeholders deserve and expect more from us, and they're right to do so. They want us to be a leader in this area, just as we are in the other areas of our business. So today we're changing our policy.

Now I'd like to tell you what we are doing to remove toxic chemicals from our new products, and to more aggressively recycle our old products.

Removing Toxic Chemicals

Lead

Many of the dangerous chemicals we all want to eliminate from electronic products are found in very small amounts, but there's one toxic substance that some companies still ship by the pound, and that's the lead contained in their cathode-ray tube (CRT) displays. A typical CRT contains approximately 3 pounds (1.36 kg) of lead. In mid-2006, Apple became the first company in the computer industry to completely eliminate CRTs. The effect has been stunning — our first CRT-based iMac contained 484 grams of lead; our current third-generation LCD-based iMac contains less than 1 gram of lead.

Apple completely eliminated the use of CRTs in mid-2006.

A note of comparison — Dell, Gateway, Hewlett Packard and Lenovo still ship CRT displays today.

Cadmium

Hexavalent Chromium

Decabromodiphenyl Ether

The European Union is generally ahead of the U.S. in restricting toxic substances in electronic products. Their latest restrictions, known as RoHS, went into effect in July 2006. All Apple products worldwide comply with RoHS. Our manufacturing policies had already restricted or banned most of the chemicals covered by RoHS, and Apple began introducing fully RoHS-compliant products a year before the European deadline.

Almost a year later, however, some electronics companies can only claim their products are RoHS compliant because of certain little-known exemptions granted by the EU. Despite the tough restric-

tions of RoHS, these exemptions let companies ship electronics that still contain high concentrations of two hazardous substances — hexavalent chromium, the carcinogen against which Erin Brockovich famously campaigned, and the brominated flame retardant decabromodiphenyl ether (DecaBDE), which is also feared to have adverse health effects. Apple phased out these and many other chemicals several years ago through design innovations and the use of higher quality metals and plastics.

Apple products met both the spirit and letter of the RoHS restrictions on cadmium, hexavalent chromium and brominated flame retardants years before RoHS went into effect.

A note of comparison — Some electronics companies, whose names you know, still rely on RoHS exemptions and use these toxic chemicals in their products today .

Arsenic
Mercury

Arsenic and mercury are industry standard materials used in liquid crystal displays (LCDs). Arsenic is added during the manufacturing of the high performance glass used in LCDs to prevent the formation of defects, and the fluorescent lamps used to illuminate LCDs contain minute amounts of mercury. Apple is on track to introduce our first displays using arsenic-free glass in 2007. A small number of high performance integrated circuits (ICs) will continue to contain a minute amount of arsenic as an element of the semiconductor substrate.

To eliminate mercury in our displays, we need to transition from fluorescent lamps to light-emitting diodes (LEDs) to illuminate the displays. Fortunately, all iPod displays already use LEDs for illumination, and therefore contain no mercury. We plan to introduce our first Macs with LED backlight technology in 2007. Our ability to completely eliminate fluorescent lamps in all of our displays depends on how fast the LCD industry can transition to LED backlighting for larger displays.

Apple plans to completely eliminate the use of arsenic in all of its displays by the end of 2008.

Apple plans to reduce and eventually eliminate the use of mercury by transitioning to LED backlighting for all displays when technically and economically feasible.

Polyvinyl Chloride**Brominated flame retardants**

Some companies have made promises to phase out other toxic chemicals like polyvinyl chloride (PVC), a type of plastic primarily used in the construction industry but also found in computer parts and cables, and brominated flame retardants, or BFRs, which reduce the risk of fire. Apple began phasing out PVC twelve years ago and began restricting BFRs in 2001. For the past several years, we have been developing alternative materials that can replace these chemicals without compromising the safety or quality of our products. Today, we've successfully eliminated the largest applications of PVC and BFRs in our products, and we're close to eliminating these chemicals altogether. For example, more than three million iPods have already shipped with a BFR-free laminate on their logic boards.

Dell and Lenovo have publicly stated that they plan to eliminate the use of PVC and BFRs in their products in 2009. Hewlett Packard has not yet publicly stated when they will eliminate the use of PVC and BFRs in their products, but has said that they will publish a plan by the end of 2007 which will state when in the future they will eliminate the use of these toxic chemicals in their products.

Apple plans to completely eliminate the use of PVC and BFRs in its products by the end of 2008.

A note of comparison — In 2007 HP stated that they will remove PVC from all their packaging. Apple did this 12 years ago. Last year, Dell began the process of phasing out large quantities of brominated flame retardants in large plastic enclosure parts. Apple's plastic enclosure parts have been bromine-free since 2002.

In one environmental group's recent scorecard, Dell, HP and Lenovo all scored higher than Apple because of their plans (or "plans for releasing plans" in the case of HP). In reality, Apple is ahead of all of these companies in eliminating toxic chemicals from its products.

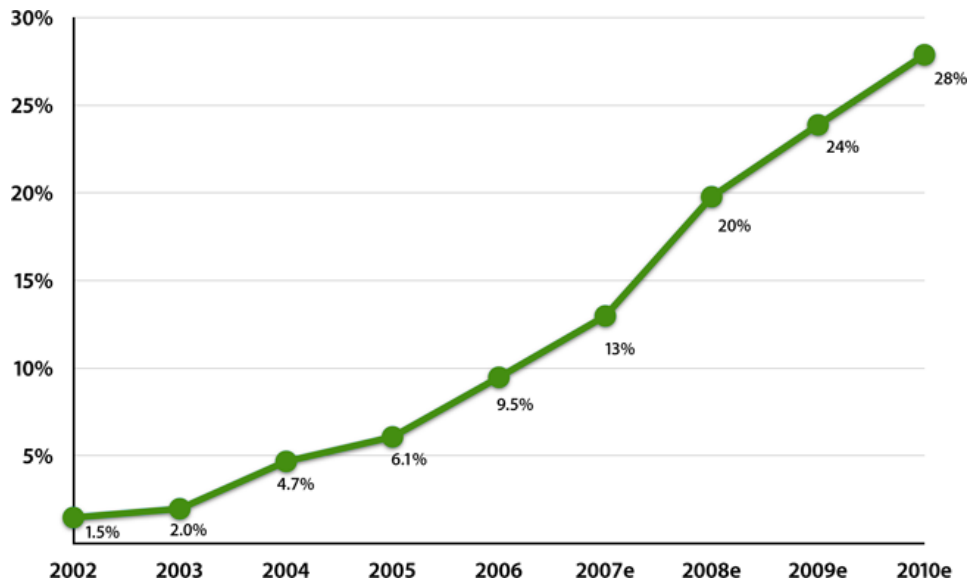
Recycling Our Products (E-Waste)

Apple started recycling in 1994 and today we operate recycling programs in countries where more than 82% of all Macs and iPods are sold. By the end of this year, that figure will increase to 93%. How successful are these programs?

Currently, there is no industry standard way to measure the effectiveness of a company's recycling programs. Dell has proposed a simple measure - assume a seven year product lifetime, and measure the percentage of the total weight you recycle each year compared to the total weight of what you sold seven years earlier. This makes sense to us, and has the added advantages of clarity and simplicity.

Apple recycled 13 million pounds of e-waste in 2006, which is equal to 9.5% of the weight of all products Apple sold seven years earlier. We expect this percentage to grow to 13% in 2007, and to 20% in 2008. By 2010, we forecast recycling 19 million pounds of e-waste per year — nearly 30% of the product weight we sold seven years earlier.

Weight Recycled as % of Past Sales



A note of comparison — the latest figures from HP and Dell are each around 10% per year, and neither company has yet disclosed plans to grow this percentage in the future. By 2010, Apple may be recycling significantly more than either Dell or HP as a percentage of past sales weight.

All the e-waste we collect in North America is processed in the U.S., and nothing is shipped overseas for disposal. We carefully review “environmental fate” submissions from each vendor, so we know how raw materials are handled at the end of the recycling process. We hold our recycling vendors to the highest environmental standards in the industry. In addition to annual compliance audits, we also review the performance of their downstream vendors. They must comply with all applicable health and safety laws, and we do not allow the use of prison labor at any stage of the recycling process.

Producers must also take responsibility for the design and material choices that create the product in the first place. It is these choices that fundamentally determine the weight and recycling value of material waste at the end of a product’s life. The iMac is a world-class example of material efficiency, having shed 60% of its weight since its debut in 1998. Our designs use aircraft-grade aluminum, stainless steel and high-grade plastics that are in high demand from recyclers, who recover and resell these raw materials for use in other types of products. Few of our competitors do the same.

Let me take a moment to talk specifically about iPods, even though they are included in the above data. All of Apple's U.S. retail stores, which now number more than 150, take back unwanted iPods for environmentally friendly disposal free of charge. As an incentive, we even offer customers a 10% discount on a new iPod when they bring their old iPod to our stores for proper disposal. This summer we're expanding it to Apple retail stores worldwide, and we're also extending it to include free shipping from anywhere in the U.S. No product purchases are required for any of our free take back programs. In a few months, we think we'll have 'best of breed' iPod recycling programs in the U.S., and we plan to continue to expand our free iPod recycling programs globally in the future.

By 2010, Apple may be recycling significantly more than either Dell or HP as a percentage of past sales weight.

All the e-waste we collect in North America is processed in the U.S., and nothing is shipped overseas for disposal.

Apple products are designed using high quality materials that are in high demand from recyclers.

The Future

Today is the first time we have openly discussed our plans to become a greener Apple. It will not be the last. We will be providing updates of our efforts and accomplishments at least annually, most likely around this time of the year. And we plan to bring other environmental issues to the table as well, such as the energy efficiency of the products in our industry. We are also beginning to explore the overall carbon "footprint" of our products, and may have some interesting data and issues to share later this year.

I hope you are as delighted as I was when I first learned how far along Apple actually is in removing toxic chemicals from its products and recycling its older products. We apologize for leaving you in the dark for this long. Apple is already a leader in innovation and engineering, and we are applying these same talents to become an environmental leader. Based on our tangible actions and results over time, hopefully our customers, employees, shareholders and professional colleagues will all feel proud of our ongoing efforts to become a greener Apple.

Steve Jobs