

## E-cycling

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A green guide to electronics recycling, purchasing, and donation.

### Simple Green Actions To Feel Great About

- **Recycle** electronics. Recycling creates jobs, reduces toxins in landfills and groundwater, and saves natural resources.
- **Refurbish** old equipment when you upgrade, or consider buying or leasing refurbished equipment. This saves you money while you help the environment.
- **Donate** used equipment to schools, non-profits, and charities. You may even get a tax deduction for helping others.
- **Share** seldom used equipment with a friend, neighbor, or family member.
- **Purchase green** — environmentally preferable — equipment. (Sources to help you do this are listed at the end.)

**What to Recycle?**

TVs  
 VCR and DVD players  
 Computers/ laptops  
 Printers and scanners  
 Fax machines  
 Monitors and keyboards  
 Chargers  
 Stereos and boom boxes  
 Calculators  
 Cell phones and pagers  
 Cameras  
 Video games  
 Data storage devices  
 Batteries

### Why Recycle Electronics?

Electronics recycling saves natural resources, reduces toxic and hazardous substances, alleviates overburdened landfills, and reduces impacts on people, plants, and wildlife.

Technology changes rapidly. As items like software, computers, cell phones, DVD players, TVs, and MP3

players are improved, older models are retired. This can happen rapidly — computers become obsolete in two to five years, and cell phones have an even shorter lifespan of 1.5 years.

In 2006, the United States generated 2.9 million tons of electronic waste, or e-waste. The EPA estimated that over 40 million computers were discarded in the U.S. in 2007. In just a few years 500 million used cell phones will be discarded, and although cell phones seem small, that number represents 250,000 pounds.

Televisions and VCRs also have rapidly become obsolete as people upgrade to HDTV and DVD players. The digital conversion affected 35 percent of U.S. households that used analog TVs. Nearly 30 million TVs were discarded in 2007, and an estimated 99 million obsolete televisions sit in basements waiting for disposal. It's estimated that over 3 billion electronic items will be discarded through 2010.

Many electronic components contain hazardous and toxic chemicals such as lead, mercury, brominated flame retardants (added to plastics), gallium arsenide, lithium, phosphorous coatings, and PVC plastics (polyvinyl chloride — these emit dioxins when incinerated). Electronics are among the leading sources of lead and mercury waste. These toxins can be released into the air and water through landfill leaching or incinerator ash.

Electronics also contain plastic, glass, steel, gold, copper, aluminum, cadmium, and silver that, if recycled, will save natural resources and reduce pollution and energy used during production. Although some electronics contain fewer toxins, it's particularly important to dispose of old models safely. For example, flat screen monitors no longer use cathode ray tubes, which contain 4-6 pounds of lead, but old monitors pose a disposal issue.

One of the substances used in making capacitors for cell phones, iPods, and computers is coltan or columbo-tantalite. Coltan, found in relatively few places in the world, has sold for as much as \$400 per pound. Eighty percent of coltan deposits are found in the Congo, home to the highly endangered eastern lowland gorilla. The mining operations have destroyed habitat needed by gorillas, and miners have taken gorillas, elephants, and other animals for bushmeat. However, if mining companies are responsible and respect habitat in the forests and reserves, they can provide a much

needed source of income to Congolese. Logging in the forests and reserves of the Congo seem to take a worse toll on habitat and wildlife than mining. Many manufacturers have pledged to get responsible sources of coltan and have made this information available to the public.

### Upgrade, Donate, or Recycle?

- **Rethink** before buying. Do you really need a new electronic device?
- **Refurbish** if you can *upgrade* your computer.
- **Recycle** if your device is broken and cannot be repaired.
- **Donate** when your device still works but no longer meets your needs.

### Is a New Product Needed?

Rethink your decision to purchase by considering whether you really *need* and will use new functions, or whether you just *want* to have latest technology because it is available. Keep equipment if it does the job you need it to do. Keep in mind, too, that sometimes new hardware and software can lead to loss of existing files and critical information.

Obsolescence occurs in different ways. Some equipment becomes obsolete based on a person's wants. When a product is still in good condition and works for basic purposes but doesn't offer the newer features or design of a new product, a person may consider it obsolete. Some manufacturers may design a product or software with obsolescence in mind. This commonly occurs when new software requires newer hardware.

How and why we consume impacts resources, waste, and the environment. Our desire to accumulate and our consumption patterns need to change to help the environment. The issue of overconsumption is highlighted by "The Story of Stuff Project," [www.storyofstuff.com/](http://www.storyofstuff.com/).

**Extend the life of electronics.** Taking care of your equipment will help it last longer. Many electronics such as cell phones, computers, and televisions can benefit from "pampering":

- **Temperature.** Keep electronics out of direct sunlight and extreme heat.
- **Ventilation.** Keep electronics in well-ventilated spots away from dusty areas and fumes, and make sure ventilation areas are uncovered.
- **Protection.** Buy a padded case to transport your laptop, and use a protective case for cell phones and MP3 players.
- **Cleaning.** Know which cleaner to use for each type of device. Some cleaning solutions can cause damage, especially to television, computer, and PDA screens. If in doubt, just use a lint-free cloth, free of any cleaning solution. If you do use a cleaner, never spray it directly on the device. Instead, apply it to a cloth and then wipe the

device. Forced-air, which comes in a can, can be used to clean keyboards and dusty areas. Avoid using a vacuum; they can create static which can damage your device.

- **Recharge.** Let your batteries run all the way down before recharging. Do this at least monthly.

### Refurbish by Upgrading

Is your computer running slow? Is it no longer powerful enough to run new software? Before deciding to recycle it, find out if it can be upgraded.

There are a number of ways to upgrade:

- **Memory (RAM):** Installing more memory can be an easy way to increase computer speed. Check to see how much memory you already have and how much your computer can hold. Some computer models require an equal amount of RAM in each slot so be sure to check the specifications of your model. Installing memory often is literally a snap — the old and new pieces snap out and in.
- **Operating System:** If you have enough memory to support a new operating system, upgrade the program.
- **Drives:** Larger hard drives, either internal or external, can be added. Faster DVD and CD drives also can be installed.
- **Ports:** Port hubs can be used to increase the number of USB ports available.
- **Cards:** A discrete graphics card can improve speed and appearance. A new network card can increase speed for surfing the Internet. Make sure the card you select is compatible with your system.
- **Batteries and Chargers:** If your device doesn't hold a charge, replace the battery. If the device won't charge at all, see if you need to replace the charger.
- **Bargain Shop:** Upgrades can differ in price by \$50 or more, even for a battery. Be sure to compare prices. Checking online is often a quick way to get prices from many competitors.

### Where to Recycle Electronics

Many areas have city or county drop-off recycling centers. Some municipalities collect electronics, and often there are public and private organizations that will recycle electronics. Some manufacturers and retailers like Best Buy and Staples will accept old equipment if you ask. The following websites will help you locate recycling centers in your area:

### Nebraska Recycling Information:

- **Nebraska Department of Environmental Quality** ([www.deq.state.ne.us](http://www.deq.state.ne.us)). Click on Maps & Data on the left side, then click on the Recycling Directory. Recyclers are listed by name, county, city, and by the product they accept.

- **City of Lincoln** ([www.lincoln.ne.gov/city/pworks/waste/sldwaste/recycle](http://www.lincoln.ne.gov/city/pworks/waste/sldwaste/recycle)). A list of computer, television and battery recyclers can be found by clicking on Recycling Locations by Type of Item located under drop-off locations.
- **WasteCap Nebraska** ([www.wastecapne.org/guide-book/](http://www.wastecapne.org/guide-book/)) is a nonprofit organization that provides confidential, nonregulatory waste reduction and recycling services to Nebraska businesses.

#### National Recycling Information Sources:

- **EIA Consumer Education Initiative** ([www.eiae.org](http://www.eiae.org)) is an excellent website where you can find recycling programs, locations, and events by state.
- **Recycle My Cell Phone** ([recyclemycellphone.org/recycle.cfm](http://recyclemycellphone.org/recycle.cfm)) is an organization that will recycle your cell phone or help set up a cell phone recycling center in your community.
- **e-Cycling** ([www.epa.gov/epawaste/conserves/materials/ecycling/index.htm](http://www.epa.gov/epawaste/conserves/materials/ecycling/index.htm)) is an EPA website that includes what and where to recycle.

#### Why Reuse or Donate?

Donating for reuse prevents waste. It's far more effective than recycling. When you donate equipment that is in good working order, school children, low-income families, people with disabilities, charitable, and nonprofit organizations benefit, and so does society. Some organizations also refurbish equipment so trainees can learn valuable job skills.

Call local schools, Goodwill and other organizations if you are interested in giving, or check out the following organizations that accept donations.

- **Collective Good** ([greenphone.com/](http://greenphone.com/)) and **Green Phone** ([greenphone.com/](http://greenphone.com/)) are online mobile phone recycling resources. If you have a used mobile phone sitting on a shelf or in a drawer, you can dispose of it here in an environmentally and socially responsible manner.
- **Call to Protect** ([www.wirelessfoundation.org/CallToProtect/index.cfm](http://www.wirelessfoundation.org/CallToProtect/index.cfm)) is a national campaign to collect wireless phones for victims of domestic violence, providing a lifeline in an emergency.
- **The Women's Funding Network** ([www.womensfundingnetwork.org/take-action/recycle](http://www.womensfundingnetwork.org/take-action/recycle)) recycles cell phones to support programs that alleviate poverty and supply 911 emergency phones to senior citizens and those at risk.
- **Cell Phones for Soldiers** ([www.cellphonesforsoldiers.com/shippingLabel\\_generic.html](http://www.cellphonesforsoldiers.com/shippingLabel_generic.html)) helps soldiers serving away from home call their families.
- **Freecycle** ([www.freecycle.org/](http://www.freecycle.org/)) allows people to exchange goods for free. Groups exist in nearly 5,000 communities. Check the website to find a group near you.

- **Craigslist** ([www.craigslist.org/about/sites](http://www.craigslist.org/about/sites)) allows you to sell items or give them away. Check the website to find your local Craigslist.

**Remember to donate equipment now!** It is important to donate equipment soon after you stop using it so it doesn't become obsolete while sitting in storage. It is estimated that 72 percent of electronic products sit in storage for three years.

#### Green Purchasing

Encourage the manufacture of sustainable products by telling manufacturers and suppliers your concerns, and by purchasing products that are easily upgradeable, less toxic, easier to recycle, use less materials, and reduce waste.

Other things you can do:

- **Buy used or refurbished products.** There are plenty of barely used products that can be bought for a much lower cost. Bargains can be found on Amazon.com, Buy.com, E-bay, and Craigslist.
- **Search for free items.** Many times people will give away used items when they upgrade. Check Freecycle and the free sections of Craigslist.
- **Look for ENERGY STAR® equipment:** ENERGY STAR compliance saves electricity and reduces greenhouse gases related to energy generation. ENERGY STAR labels or information is available for nearly all electronics and appliances. Check [www.energystar.gov](http://www.energystar.gov).
- **Check The Guide to Greener Electronics.** The Guide grades manufacturers that work to eliminate harmful chemicals from their products, and take back products from consumers for recycling. Read more at [www.greenpeace.org/usa/news/green-guide-14](http://www.greenpeace.org/usa/news/green-guide-14) or [www.greenpeace.org/raw/content/international/press/reports/greener-electronics-ranking-c.pdf](http://www.greenpeace.org/raw/content/international/press/reports/greener-electronics-ranking-c.pdf)
- **Purchase upgradable equipment.** Since software and electronics become obsolete so quickly, make sure you purchase computers that can be upgraded. Look for the ability to upgrade operating systems, software, and memory. And make sure parts and service will be available after purchase.
- **The Electronic Product Environmental Assessment Tool (EPEAT®)**, ([www.epeat.net](http://www.epeat.net)), focuses on computers and monitors. To be registered with EPEAT, the product must meet 23 environmental performance criteria or attributes. Products are rated for three levels depending on the percentage of 28 additional optional criteria met. Compared to traditional computer equipment, EPEAT-registered computers are to have reduced levels of lead, cadmium, and mercury; be more energy efficient; and be easier to upgrade and recycle. EPEAT operates a verification program to evaluate the credibility of the system by selecting samples from the registry. EPEAT is managed by the nonprofit organization Green Electronics Council.

## Become Committed to E-Cycling

Don't be a polluter; recycle that computer! Join in making the commitment to e-cycle. For more information:

### Electronics Recycling

[www.electronicrecycling.net/](http://www.electronicrecycling.net/)

### Earth 911

[earth911.com/](http://earth911.com/)

### The U.S. EPA

[www.epa.gov/epr/products/electronics.html](http://www.epa.gov/epr/products/electronics.html)

[www.epa.gov/epawaste/conservation/materials/ecycling/basic.htm](http://www.epa.gov/epawaste/conservation/materials/ecycling/basic.htm)

[www.epa.gov/osw/partnerships/wastewise/pubs/wwupda14.pdf](http://www.epa.gov/osw/partnerships/wastewise/pubs/wwupda14.pdf)

### Electronics TakeBack Coalition

[www.electronicstakeback.com/index.htm](http://www.electronicstakeback.com/index.htm)

### U.S. Geological Survey

"Recycled Cell Phones — A Treasure Trove of Valuable Metals," [pubs.usgs.gov/fs/2006/3097/fs2006-3097.pdf](http://pubs.usgs.gov/fs/2006/3097/fs2006-3097.pdf)

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**Index: Consumer Education  
General**

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