

# eCycling: turning cache into cash

**A** **definition:** green - [green] **noun, verb.**

Not only is it the color of our money, but it is also a nickname for it.

It means young or inexperienced, green at heart. But it also means old, as in rancid meat. It can mean healthy, full of life and vigor. Or ill, pale or sickly in appearance. It often has a connotation of immature in age or judgment. But concerning conservation, it is considered a wise choice.

Green is not just the color in the spectrum between blue and yellow. It is now the hot buzz word in environmental circles. And a burgeoning popular branch is eCycling, short for electronic reCycling. Recycling devices? Is

it possible to turn that unwanted cache into cash?

## What is eCycling?

ECycling is the concept of recycling electronic waste (e-waste), or any obsolete, broken, or unwanted electronic equipment.

Computers, data storage devices, televisions, VCRs, stereos, monitors, cell phones, printers, copiers, and fax machines are common products that are eCycled.

These devices can be reused in a number of ways. First, a working device that is too old or obsolete for one user may work well for another person. Some broken devices could possibly be

repaired, refurbished, or used as parts in a similar device. Other devices could go through a process of extracting their valuable components or materials for reuse in other products.

## Why go green?

Although e-waste makes up less than 4% of the total amount of solid waste in the United States, it is the most rapidly growing type of waste. According to [ecyclingtools.com](http://ecyclingtools.com), 490 million personal computers were retired between 2000 and 2005, and the number is expected to increase to 955 million between 2005 and 2010.

With the price of new electronic equipment ever decreasing, and the promise of better performance, some consumers find it easier to buy new and toss out the old. It is estimated only 10% of e-waste is being recycled.

Electronics use valuable, scarce natural resources, such as iron metals, copper, gold, silver, and aluminum. Putting these materials at the bottom of a landfill means there is less available for new electronic devices for the future.

Not only does much of the electronic equipment we throw away contain valuable material, it also contains harmful or toxic hazardous waste. Mercury, lead, cadmium, beryllium, chromium, antimony, brominated flame retardants in plastics, and lead in cathode ray tubes and solder and many others are common components in electronic

technology that are dangerous to people and the environment.

## Who benefits?

Clearly, getting toxic materials out of landfills benefits everyone. And conserving materials means electronic devices can continue to be manufactured inexpensively – again a benefit to us now and in the future. But these long term intangibles are not the only advantage.

## There's good and bad news

The bad news is that right now, extracting materials using traditional recycling methods costs more than what the recovered



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A bin full of recyclable electronics is ready for pick up to be delivered to the e-waste recycling center.

materials are worth. Many recycling centers still accept e-waste, however. Possibly streamlining methods of collection could help with this cost. More recycling efforts on the part of the public community can be a driving force for this change. However, some lawmakers are taking a large step placing the burden on electronics manufacturers. Last year, the Minnesota Legislature passed a requirement that manufacturers must collect and recycle an equivalent of 60% of the weight of electronics they sold in the state the previous year. Over the past five years, nine states have adopted similar laws.

The good news is there is a better way. Donating parts or working items is an excellent choice for several reasons. First, groups and individuals in need benefit directly and immediately. For example, Independence, Inc. located in Lawrence, refurbishes donated PCs and distributes them to people with disabilities in northeast Kansas. Small RWDs and cities might also benefit by being on the receiving end of these donations. Nationally some private companies recognize the need or serving a target population as grounds for providing free equipment. In addition, donating is also preferable because manufacturing electronics uses more resources than simply its components. According to the Kansas Department of Health and Environment (KDHE), the manufacturing of one desktop PC with a 17" monitor uses the following resources: 528 lbs of fossil fuel, 48 lbs of chemicals, 412 gallons of water, and tons of mining wastes!

So does eCycling directly help your financial bottom line? Consider this: last fall KDHE awarded reimbursement grants nearing \$1.3 million for eCycling: see [http://www.kdheks.gov/waste/bwm\\_grants.html](http://www.kdheks.gov/waste/bwm_grants.html).

## Hazardous Materials found in every day electronics *from SmallDog.com*

Electronics contain substantial amounts of lead, cadmium, hexavalent chromium, mercury, and brominated flame retardants. If improperly handled, these toxins can be released into the environment. Older TVs and computers can contain an average of four pounds of lead as well as other toxic substances like chromium, cadmium, mercury, beryllium, nickel, and zinc.

### Monitors

- Cathode Ray Tubes (CRTs) in monitors and televisions utilize lead to shield the user from radiation

### Circuit boards

- Can contain chromium, lead, beryllium, mercury, cadmium, nickel and zinc
- Lead solder is used to hold components to circuit boards

### Batteries

- Printed circuit boards often contain batteries that have numerous hazardous metals including mercury, nickel, cadmium and lead

### Laptops

- In addition to the materials in monitors and CPUs, laptop computers have a small florescent lamp containing mercury in the screen

### Peripherals

- Printers utilize circuit boards, batteries, and toner cartridges
- Copiers have selenium or chromium drums

## On the Web

- <http://www.kdheks.gov/waste/> - Kansas Bureau of Waste Management
- [http://www.kdheks.gov/waste/bwm\\_recycling.html](http://www.kdheks.gov/waste/bwm_recycling.html) - BWM's page specific to eCycling
- <http://www.kansasgreenteams.org/files/Guide%20for%20City%20and%20County%20Offices.pdf> - Kansas Green Team's Guide for City & County Offices
- <http://www.kansasbirp.com/centerdirectory.asp> - Where in Kansas you can recycle: search by location and material
- <http://www.kskor.org/> - Kansas organization of Recyclers
- [www.getcaughtrecycling.org](http://www.getcaughtrecycling.org) - Kansas Department of Health & Environment sponsored program
- [www.techsoup.org](http://www.techsoup.org) - resource for non-profits
- <http://earth911.org/electronics/> - national resource site
- <http://www.epa.gov/epaoswer/hazwaste/recycle/ecycling/donate.htm> - EPA resource list of where & how to donate electronics

In a press release announcing the grant program, Governor Kathleen Sebelius remarked, "We've made great progress in recycling things like paper, metals, glass and plastic, but electronics and tires aren't seen as recyclable, even though they are. These projects will help encourage people to recycle these items and keep them out of our landfills."

"It's a two year program," says Kristine Hicks from the KDHE Waste Reduction, Public Education, and Grants Department. "This summer, the committee will be revisiting the idea of renewing the grant." Director of the Bureau of Waste Management for KDHE is Bill Bider, who can be reached at 785-296-1600: he is the main resource regarding recycling options in Kansas.

"Since KDHE has pumped over \$1 million into this program, Kansas has a great option to participate," says Steve Fishman, the electronics expert with the

EPA Region 7 eCycling Program Coordinator in Kansas City. "KDHE is very forward thinking in this; it's a great program."

profit that sets up redistribution from other agencies." Surplus Exchange can be found at [www.surplusexchange.org](http://www.surplusexchange.org).

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Steve also remarked that municipalities and non-profits might be able to procure pre-owned government computers via the General Services Administration website for excess property located at:

<http://www.gsa.gov/Portal/gsa/ep/channelView.do?pageTypeId=8207&channelId=-12971>.

Fishman also advised, "Cities or RWDs can also go to Surplus Exchange in Kansas City, a non-

**How to buy smart?**

Smart purchases can ensure the useful life of the electronics you buy is longer. Purchasing hardware that is easily upgradeable and expandable is a good first step.

If you have a particular need to maintain a very current standard of hardware, leasing electronics might be a good option. This ensures your organization has the most recent technology available without the difficult asset

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*Pallets of business and every day electronics, televisions, monitors, computers CRTs are stacked and ready for pick up by the eCycling center.*

management problem that comes with purchasing new.

Former EPA eCycling Coordinator David Flora said, "There is a tool to help inform computer purchasing. The Electronics Environmental Benefits Calculator (EEBC) is intended to assist institutional purchasers, including Federal Electronic Challenge (FEC) program participants, in quantifying the benefits of environmentally sound management of electronic equipment. The Calculator estimates the environmental and economic benefits of purchasing EPEAT-registered products, in addition to improvements in equipment operation and end-of-life management practices. Currently this tool is designed to evaluate EPEAT-registered desktop (with a CRT or LCD) and notebook computers." See <http://eerc.ra.utk.edu/ccpct/eebc/eebc.html>.

#### **Where can I eCycle?**

Many recycling centers accept electronics for extracting materials. You may also want to donate working items. You can search for a center by location and material at the Kansas Business

and Industry Recycling Program website:

<http://www.kansasbirp.com/centerdirectory.asp>.

For example, PC Disposal in Olathe is a commercial computer recycler that works mostly with businesses and corporations that need to responsibly dispose of their outdated computers. They take all computers working or not. Also, some retailers have drop off locations, such as Best Buy, T-mobile, Staples, and others. You might turn a bit of that cache into cash by reselling: eBay even has a special section dedicated to eCycling: See

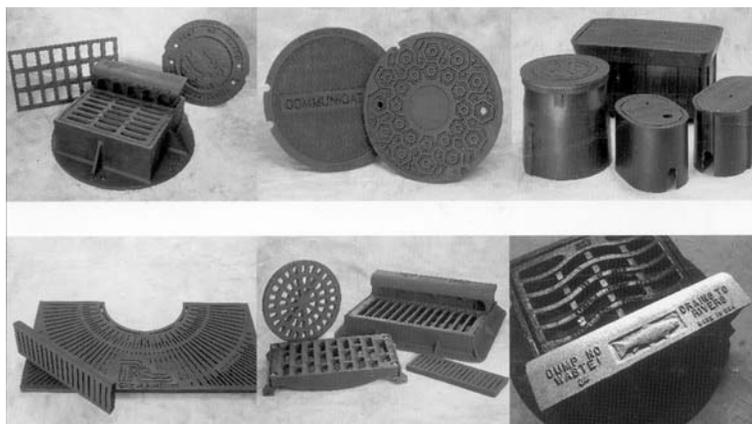
<http://pages.ebay.com/rethink/>.

On the other end of the process, you can help eCycle and save money by purchasing refurbished equipment. As the Kansas Computer Recycling Center in Topeka touts, "The goal is to keep everything out of the landfill."

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