

ELECTRONICS REUSE AND RECYCLING

Do you have old, outdated electronic products (e.g., personal computers and peripherals, laptops, fax machines, copiers, televisions, telephones, and audio/visual or CAD equipment) in your office or home? If so, you're not alone.

According to the Institute for Local Self-Reliance, approximately 75 percent of obsolete electronics are currently being stored or warehoused until there is agreement on the best way to manage this material. As stockpiling continues, there is growing concern about the volume of used or obsolete electronic equipment that will need to be managed responsibly when it emerges from storerooms or attics.

Why Are Used Electronics a Concern?

Besides taking up space in empty cubicles and store-rooms, end-of-life electronics pose several issues regarding proper disposal and potential environmental consequences.

Discarded electronics:

- ◆ **Represent a rapidly growing waste stream.**
Technological advances are rapidly rendering formerly cutting-edge electronics obsolete. An estimated 20 million personal computers became obsolete in 1998. Most of these are in storage. Of the remainder, the bulk were disposed of; probably fewer than 6 percent were recycled. Currently, the useful life of a computer is only 3 to 5 years and shrinking. In 2005, more than 63 million personal computers are projected to be retired according to a recent study by the National Safety Council.
- ◆ **Waste valuable resources.**
Electronic products are made from valuable resources, including precious and other metals, engineered plastics, glass, and other materials, all of which require energy to source and manufacture. Many electronic products also contain parts that could be profitably refurbished and reused with little effort. When we throw away old electronic equipment, we're throwing away these resources and generating additional pollution associated with the need to access virgin materials and manufacture new products.
- ◆ **Contain hazardous or toxic substances.**
Some electronic products (notably those with cathode ray tubes or CRTs, circuit boards, batteries, and mercury switches) contain hazardous or toxic materials such as lead, mercury, cadmium, chromium, and some types of flame retardants, and do so in amounts that may cause them to test hazardous under Federal law. In particular, the glass screens, or CRTs, in computer monitors and televisions can contain as much as 27 percent lead. Some estimate that since many batteries (such as car batteries) have started to be removed from waste, electronic products represent the largest remaining contributor of heavy metals to the solid waste stream.

There is concern, particularly at the state and local levels, that products containing these constituents might pose some environmental risks if they are not properly managed at end-of-life.

Source: EPA, October 2000, *Solid Waste and Emergency Response / 5306W, EPA530-N-00-007*

What Can You Do With Used Electronics?

1. **Assess the Equipment You Have.**
What type of equipment is it? How old is it? Is any of it still working?
2. **Explore Your Reuse Options.**
If your equipment is working, is there a nonprofit organization or school district in your area that could use it? Do you qualify for a tax break for donating equipment?
3. **Consider Repair or Upgrade.**
If your equipment doesn't work, can it be repaired, refurbished, or used for parts to build or repair other systems? If your equipment can't be repaired, will the servicer send unsalvageable parts to be recycled?
4. **Select a Recycler** (such as Greenlight Recycling). What is the recycler's disposal policy? Does the recycler have (or need) a permit to operate in your state?

What Are the Benefits of Electronics Reuse and Recycling?

The most environmentally sound management of solid waste is achieved when approaches are implemented according to the U.S. Environmental Protection Agency's (EPA) preferred order: waste prevention first, recycling second, and disposal last. There are numerous environmental and societal benefits to reusing or recycling used electronics. Proper end-of-life management of electronics:

- ◆ **Diverts materials from disposal.**
Electronics reuse and recycling divert bulky equipment from landfills and incinerators. California bans CRT disposal in municipal landfills.
- ◆ **Provides social benefits.**
Reuse and donation of electronic products extends their useful life and affords individuals or organizations that could not buy new equipment the opportunity to make use of secondhand equipment.
- ◆ **Conserves natural resources and reduces pollution.**
Products reconfigured or redesigned to reduce materials and use greater recycled content use fewer virgin resources and require less energy to produce. When less virgin material and energy is used, pollution is reduced. These energy savings also translate into reduced greenhouse gas emissions. When reuse is not an option, recycling electronic products creates a supply of parts and materials that can be used to refurbish older products or manufacture new ones. Many environmentally conscious manufacturers recycle used or off-spec electronic products internally through asset recovery programs.