

Issue Brief: Consumer and Office Electronics

Overview

The digital age is brimming with commodities of convenience and comfort, but its rapid innovation and adoption does not go without environmental, social and human health costs. At our current rate of consumption, millions of pounds of electronics are purchased and disposed of every year in the U.S. alone. (Basel Action Network) With demand growing and product lifecycles shrinking, it is important to examine the implications of producing, distributing, using and disposing of so many electronic products. Toxic chemicals and heavy metals are often used to make parts such as screens, semiconductors and batteries, releasing pollutants into our air and water. Electronics require large amounts of energy and water to produce, as well as energy during consumption, distribution and disposal. Electronic waste, or e-waste, is one of the fastest growing waste problems in the world, due to the massive quantities and toxic releases entering landfills and polluting ecosystems every day. Even when recycled, e-waste is often managed improperly. As an electronics buyer, you can support suppliers who monitor and minimize the environmental footprint of their products.

Environmental Concerns

Toxic Materials: Electronics often contain toxic materials such as lead, mercury, cadmium, hexavalent chromium, PVC plastic and BFRs (Brominated Flame Retardants). The use and management of these materials can have significant environmental and health impacts as well as recyclability implications.

Air Pollution: Toxic materials used in manufacturing electronics can create hazardous air emissions, including greenhouse gases, acid fumes, dust, nitrogen oxides, and VOCs. (Volatile Organic Compounds.) VOCs are chemicals that contribute to the production of ozone pollution and smog.

Water Pollution and Consumption: Wastewater effluents can contain hazardous materials such as metals, acids and alkalis, cyanides and suspended solids, which can leach into drinking water and harm wildlife. Producing electronic products requires extensive amounts of water.

Energy Consumption: During the production of electronics, one semiconductor facility can consume 8.8 million kilowatt hours of electrical power every year. General use of electronic products consumes extensive amounts of energy. Additionally, phantom energy, which refers to the amount of energy a computer consumes while in standby mode, can also significantly contribute to energy consumption. Suppliers can cut costs and reduce energy impacts (greenhouse gases) with improved efficiency. (SVTC)

Electronic Waste: Toxic materials in electronics make disposing of them hazardous to the environment and to human health, and their often short lives create excessive waste volumes. Millions of tons of electronic waste fill US landfills each year. Electronic waste is also being exported to China and Africa for recycling and disposal, where environmental and health regulations for waste are less rigorous.

Printer Ink: Conventional ink is made from petroleum, a non-renewable fossil fuel. Primary concerns surrounding petroleum based products include resource depletion and greenhouse gas emissions. Producing conventional ink also produces VOC (Volatile Organic Compounds) emissions and heavy metal waste. VOCs are chemicals that contribute to ozone pollution and smog.

What Can You Do?

Look for Certifications: **Energy Star** is an EPA/Dept. of Energy program designed to

identify and recognize the most energy efficient products in each product category. Energy Star certification is available for most categories of household and office electronics. The Electronic Product Environmental Assessment Tool (**EPEAT**), a program of the Green Electronics Council, is intended to help institutional purchasers evaluate the environmental attributes of electronics equipment. The program now evaluates desktop computers, notebooks and monitors, and standards are under development for televisions and imaging equipment. EPEAT evaluates products based on criteria in eight categories and covers product lifecycles.



Support Products that Contain Post-Consumer Recycled Materials: Compared to making virgin materials, fewer inputs are generally required to produce post-consumer recycled plastic and metal, less air and water pollutants are released into the environment, less energy is consumed, and fewer natural resources are used.

Support Products Designed to Minimize Environmental and Health Impacts: Ask questions! Set Standards!

Support Products that Are EU RoHS Compliant: The European Union Restriction on Hazardous Substances requires the substitution of potentially harmful heavy metals and brominated flame retardants in electronics.

Support Products that Have Supplier Sponsored Take-Back Programs: Many suppliers now offer free electronics take-back programs for consumers. These programs ensure that electronics are recycled or disposed of properly.

What Now?

Does this choice significantly reduce the environmental impacts across the lifecycle of this product?

Is there a business opportunity to generate increased cost savings and improve customer satisfaction?

Additional Resources

- **Energy Star:** <http://www.energystar.gov/>
- **EPA's eCycling:** <http://www.epa.gov/epaoswer/hazwaste/recycle/ecycling/index.htm>
- **EPA's Design for the Environment:** <http://www.epa.gov/dfe/pubs/projects/index.htm>
- **Greenpeace Electronics Guide:** <http://www.greenpeace.org/international/news/green-electronics-guide-ewaste250806>
- **EPEAT:** <http://epeat.net>
- **Electronics Take Back Coalition:** <http://www.electronicstakeback.com>
- **Green CA Office Machine Best Practices Guide:** <http://www.green.ca.gov/EPP/OfficeMach/comp.htm>