

The following facts from:
http://www.bottlebill.org/impacts/aluminum_waste.htm

Aluminum Can Sales and Wasting Facts

-  Between 1990 and 2000, Americans wasted a total of 7.1 million tons of cans: enough to manufacture **316,000 Boeing 737 airplanes**.
-  Americans **wasted more than twice as many cans** in the year 2001 as in 1981, and **eight times** more than in 1972.
-  Since the first Earth Day in 1970, Americans have wasted an estimated 910 billion aluminum beverage cans worth over **\$15 billion**. If the current wasting trend continues, we will have squandered **one trillion** cans by the year 2003—or almost **3,600 cans** wasted for every man, woman and child in America.
-  The quantity of cans wasted in 2001—759,625 tons—was equivalent to the entire annual production capacity of **four major aluminum smelters** in the Pacific Northwest.
-  The quantity of aluminum cans wasted in the year 2001 was greater than the amount used nationally for **trucks, buses, bridges, street and highway applications combined**.
-  Laid end-to-end, the 50.7 billion cans wasted in 2001 would encircle the Earth **153 times**.

Energy and Environmental Facts

-  The energy required to replace the aluminum cans wasted in 2001 was equivalent to **16 million barrels of crude oil**: a 21% increase in energy consumption since 1991.
-  The electric and thermal energy required to replace the 910 billion cans wasted since 1970—16 million tons of metal—is equivalent to about **342 million barrels of crude oil, or 15 billion gallons of gasoline**.
-  This is enough to supply the **total energy needs of 20 million homes** for a year, or to supply **29 million cars with gasoline** for a full year.
-  Replacing one wasted can requires about 0.5 kWh of electricity: enough to light a **100-watt bulb** for 5 hours, or to power an average **laptop computer** for 11 hours.
-  For every **six-pack** of beer or soda not recycled, the energy equivalent of **one beverage can full of gasoline** is squandered.
-  Over **3 million tons of mining tailings** and mud wastes were created—in other countries, not our own—in replacing the 759,625 tons of cans wasted in the U.S. last year.

...More Energy and Environmental Facts

- More than **two million tons of coal** were burned to generate the thermal and electric energy required to replace just **half** of the cans wasted in the United States last year.
- For **each ton of cans wasted**, **4.08 tons of greenhouse gasses** are generated through replacement production, along with about **140 pounds of sulfur oxides (SO_x)**, **30-50 lbs of nitrogen oxides (NO_x)**, **40-70 lbs of airborne particulates**, **2.7 lbs of total fluorides**, and **1.3 lbs of volatile organic compounds (VOC's)**.
- Over **3 million tons of greenhouse gases** were produced to replace the aluminum cans trashed in 2001 with new cans made from virgin materials.
- Two and a half billion gallons of water** were used to replace the aluminum cans trashed in 2001 with new cans made from virgin materials.
- The energy wasted in the year 2001 by not recycling aluminum cans could meet the **electricity needs** of all the homes in Chicago, Dallas, Detroit, San Francisco, and Seattle.
- Over **two hundred thousand people** have been relocated to make way for hydroelectric reservoirs in nine aluminum-producing countries.

Recycling Facts

- After peaking at **65%** in 1992, the aluminum beverage can recycling rate dropped to **49.2%** in the year 2001—a rate that had already been **exceeded twenty years ago**.
- In 2001, Americans consumed **9 billion more** aluminum beverage cans than they did in 1991, yet recycled **6 billion fewer**.
- The Aluminum Association, a Washington trade organization representing the aluminum industry, misleads the public by regularly **inflating the U.S. aluminum can recycling rate by 6-8 percentage points** by including *imported scrap cans* in their calculations: cans that were *not originally purchased* by U.S. consumers.
- The beverage container recycling rate in the ten U.S. states with bottle bills is above **80%**; **3-4 times the rate in non-bottle bill states**.
- In **Michigan**, where the per container deposit is **10¢**, the aluminum can recycling rate is **95%**, compared to the **national rate of only 49.2%**.
- Despite the high recycling rates achieved by bottle bills, the Aluminum Association, the National Soft Drink Association, and major brand owners including Coke, Pepsi, and Anheuser-Busch, have **fought deposit legislation for thirty years**, frequently outspending deposit advocates by 10 to 1 in local and state legislative battles.
- On June 25th, 2002, **Hawaii became the 11th U.S. state** to pass a bottle bill, and the first since California adopted container deposit legislation in 1986.

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About

Fact Sheet - Electronics Waste (e-waste)

From Lara Jill Rosenblith, Your Guide to Environmental Issues.

The hidden harm of the technological revolution

The technological revolution brought with it a consumer demand for constant upgrades to newer, faster, and more advanced models of older products. The computer industry continues to introduce new technological advances and "upgrades" on the average of every 18 months.¹ The average life span of a personal computer has shrunk from four or five years to a mere two years.²

Where do the outmoded models go? Unfortunately, much of it goes out with the trash, making up the fastest growing segment of the waste stream.

Electronic waste, commonly known as "e-waste" includes electronic appliances, products, components, and accessories that, for one reason or another, we have deemed obsolete and have thus discarded.

- The U.S. Environmental Protection Agency (EPA) estimates that electronics waste accounts for about 1% of the nation's 210 million tons of solid waste each year. Other reports have estimated that e-waste constitutes as much as 2-5% of the US municipal solid waste stream and continues to grow rapidly.³
- E-waste is continually on the rise—an average of 220 tons of computers and other e-waste are dumped in landfills and incinerators every year in the US.⁴
- Municipal incineration is the largest source of dioxin into the US and Canadian environments and among the largest point source of heavy metal contaminations of the atmosphere.⁵

Computers and Televisions

- A February 2002 report by the Silicon Valley Toxics Coalition predicted that 500 million computers will become obsolete between 1997 and 2007, resulting in 6.32 billion pounds of plastic and 1.58 billion pounds of lead. The Worldwatch Institute reported in its annual "Vital Signs" report that more than 2.9 million tons of electronic waste was landfilled in 1997.⁶
- Over 20 million personal computers became obsolete in 1998, but only 13% were reused or recycled.⁷
- Each computer and television display uses a Cathode Ray Tube that contains an average of 4-8 pounds of lead.⁸
- Monitor glass contains about 20% lead by weight. "When this glass is crushed in a landfill, the lead leaches into the soil.
- By the year 2005, one computer will become obsolete for every new computer put on the market.⁹
- More than 300 million computer monitors have been sold in the USA since 1980. Yet in 1987, only about 1.7 million monitors in the US were "recycled," the majority of which—about 1 million monitors—were shipped to countries such as China.¹⁰

Cell Phones—A little gadget can add up to big problems

- By 2005, there will be at least 200 million cell phones in use around the US and at least 500 million older models stockpiled in drawers awaiting disposal according to study done by Inform.¹¹
- Similarly, Inform also estimates that within 3 years, Americans will discard about 130 million cell phones per year. This figure adds up to be approximately 65,000 tons of trash, including many toxic metals and other health hazards.¹²

¹<http://www.cawrecycles.org/Ewaste/background%20e-waste.html>

²ibid.

³Silicon Valley Toxics Coalition (SVTC) [http://www.svtc.org](#)

⁴The Basel Action Network (BAN) and Silicon Valley Toxics Coalition (SVTC) [http://www.ban.org](#)

⁵<http://www.crra.com/ewaste/articles/computers.html>

⁶Environmental Media Action Campaign (EMAC) [http://www.emac.org](#) —US EPA

⁷[http://www.crra.com/ewaste/articles/computers.html](#)

⁸Texas Campaign for the Environment [http://www.texascampaignfortheenvironment.org](#)

Energy Facts

Aluminum

- Recycled aluminum saves 95% energy vs. virgin aluminum; recycling of one aluminum can saves enough energy to run a TV for 3 hours (Reynolds Metal Company)
- Recycled aluminum reduces pollution by 95% (Reynolds Metal Co.)
- 4 lbs. of bauxite are saved for every pound of aluminum recycled (Reynolds Metal Co.)
- Enough aluminum is thrown away to rebuild our commercial air fleet 4 times every year.

Glass

- Recycled glass saves 50% energy vs. virgin glass (Center for Ecological Technology); recycling of one glass container saves enough energy to light a 100-watt bulb for 4 hours (EPA)
- Recycled glass generates 20% less air pollution and 50% less water pollution (NASA)
- 1 ton of glass made from 50% recycled materials saves 250 lbs. of mining waste (EPA)
- Glass can be reused an infinite number of times; over 41 billion glass containers are made each year (EPA)

Paper

- Recycled paper saves 60% energy vs. virgin paper (Center for Ecological Technology)
- Recycled paper generates 95% less air pollution: each ton saves 60 lbs. of air pollution (Center for Ecological Technology)
- Recycling of each ton of paper saves 17 trees and 7000 gallons of water (EPA)
- Every year enough paper is thrown away to make a 12' wall from New York to California

Plastic

- Plastic milk containers are now only half the weight that they were in 1960 (EPA)
- If we recycled every plastic bottle we used, we would keep 2 billion tons of plastic out of landfills (Penn State)
- According to the EPA, recycling a pound of PET saves approximately 12,000 BTU's.
- We use enough plastic wrap to wrap all of Texas every year (EPA)

Source: University of Massachusetts, Amherst. Produced and maintained by the Office of Waste Management

Further Facts

- A ton of recycled paper equals or saves 17 trees in paper production.
- Production of recycled paper uses 80% less water, 65% less energy and produces 95% less air pollution than virgin paper production.
- If offices throughout the country increased the rate of two-sided photocopying from the 1991 figure of 20% to 60%, they could save the equivalent of about 15 million trees." (from Choose to Reuse

Recycling Programs Nationwide

State	Funding Source	Recycling Budget
STATES THAT GENERATE RECYCLING MONEY FROM TIPPING FEES		
New Jersey	Charges a \$1.50/ton tipping fee surcharge .	N/A
Delaware	Charges a surcharge on landfill disposal.	\$3 million
Illinois	There is a \$2.22/ton landfill tipping fee, of which \$0.475 goes to recycling programs.	\$6.5 million (\$2.2 million budgeted for recycling market development)
Indiana	Generated from a \$0.50/ton solid waste surcharge. Half goes to recycling market development.	N/A
Kansas	\$1.00/ton fee assessed on all municipal solid waste disposed in a Kansas landfill or transferred through a permitted solid waste transfer facility that is transported out of state.	\$5.9 million
Missouri	Generated from tipping fees.	\$850,000 maximum
Maine	Funding for the State's recycling program, which provides technical assistance to municipalities and regions, is derived from a solid waste fund that is supported by disposal fees levied on waste delivered to landfills, as well as a fee levied on the purchase of new automotive tires and batteries. Public infrastructure development is supported by grants using funds received through bonds approved by voters.	\$320,000
Nebraska	Receives 50 percent of a \$1.25/ton tipping fee, two business fees, and a \$1 fee on all new tires sold in the state.	\$5 million
West Virginia	State recycling grant programs, open dump cleanup programs, and other environment-oriented programs are funded by an \$8.25 waste assessment fee, collected at the landfills. The state charges a \$1/ton tip fee surcharge to help fund its recycling market development programs.	\$1.3-1.8 million
Wisconsin	\$3.00/ton solid waste surcharge.	\$24 million
Source:	http://www.epa.gov/jtr/state/funding.htm	
Fact Sheet Compiled by S.A.V.E. Foundation www.savemobile.org		

Chapter 1: INTRODUCTION

Background

Montana's Constitution guarantees the right to a clean and healthful environment for our and future generations. Under this charter, Legislators passed the Integrated Waste Management Act in 1991, which includes the mandate for an Integrated Solid Waste Management Plan. In the spirit of that act the Montana Department of Environmental Quality (DEQ) prepares and the Board of Environmental Review (BER) adopts this plan. This plan strives to strike a balance between managing waste and conserving resources.

The plan sets forth an agenda that focuses on the 3 R's of Reduce, Reuse, and Recycle, ultimately hoping to avoid 25% of the state's traditional solid waste. This mandate focuses on reducing the amount of waste in the state of Montana, that in turn focuses on recovering energy and raw materials when possible, and looking to landfills and incineration only after these other options have been exhausted.

There are several reasons why it is important to reduce the amount of waste that is produced. The first is the impact that solid waste disposal has on land resources. While Montana may seem to have an abundance of land that can be used for landfills, other potential uses for the land and uses of adjoining land create conflict. Property owners are not anxious to have a landfill adjoin their property. It is more and more difficult to develop new landfill sites. Reducing the volume of waste entering landfills extends the life of existing landfills.

The second reason to reduce the amount of material entering landfills is to reduce potential long-term environmental impacts of materials in landfills. While new landfills are designed to entomb wastes and perform very well, the materials placed in landfills will stay there for generations and will require long-term monitoring to ensure public safety. Reducing the toxicity of materials and providing alternatives for disposal of certain materials will protect human and environmental health.

The third reason to implement an integrated approach to solid waste management is one of global responsibility. The United States has just 5 percent of the world's population, yet uses 25 percent of the world's resources. Waste that is not recovered or prevented often involves an irrecoverable loss of energy and resources. The acquisition of raw materials, the manufacture or refinement of materials and the product manufacture are all phases of production that use energy and create waste before the use or consumption of a product.

For a product or one similar to it to be made again, without recycling, these initial phases of manufacture are needlessly repeated. Our first viewing of a product is often at the time of purchase, so these costs and impacts are often difficult to perceive. The