

Low-Fat Recycling

SWANA Technical Division Article - In spite of a high rate of consumption, Americans are showing an increasing interest in all sorts of green activities.



Shipping garbage cross-seas is no longer an alternative.

By Josephine Valencia

In 1994 Nabisco introduced a line of low-fat cookies called Snackwells. Even though the confectionery goodness was loaded with calories, folks mindlessly overindulged with guilt-free abandon. Is it possible that we are doing something similar with recycling? Are we soothing our environmental soul without caring about the actual results? In last year's *Elements* issue, this magazine stated that "Recycling has been embraced in a variety of ways and incorporated into our daily lives." Recycling has gained normalcy and perhaps even respect. In this article, we ask: Are we worthy of that respect? This is not an antirecycling article. The author is strongly committed to the environmental benefits of recycling. But this article does question the authenticity of our environmental commitment and asks if there is a better way.

Many readers of this magazine might very well have tunnel vision on waste issues. We deal with this specialized industry every day, sometimes forgetting how little knowledge other people have about solid waste and recycling. The public may have some vague notions of how recycling saves trees and reduces greenhouse gas emissions. The public may also have some general knowledge of trash being imported to or exported from one's state. However, most people lack a strong knowledge base upon which informed decisions can be made.

Many are oblivious to the global marketplace that makes recycling economically possible. They place items in curbside recycling bins where those items magically disappear in order to become new items. Perhaps this ignorance is intentional. In the words of John Godfrey Saxe, "Laws, like sausages, cease to inspire respect in proportion as we know how they are made." Perhaps a similar truism can be applied to our environmental practices. Without firm knowledge of the recycling activities in which we engage, we are absolved of consequences. Recycling feels good, and perhaps we don't really want to know what happens to this stuff. By occasionally recycling, we alleviate our environmental conscience and abstain from the need to learn more about the process.

This article is not about dumping recyclables, contaminated items, or any other antirecycling statement that claims all recycling is thrown away. Rather, this article is about our attitudes towards recycling and how they may either help or hinder the development of sustainable environmental practices.

Misguided Efforts

We are making a stand against many types of waste, and we are not alone. China is urging restaurants to stop using disposable chopsticks and has imposed a tax on those who continue to use them. San Francisco's ban on plastic bags is well known, and it's not an isolated phenomenon. Worldwide, many locations either have an outright ban on plastic bags or levy a fee for their use. These include Ireland, Germany, Israel, and China. While we are increasingly concerned about how we transport our goods home, our actual consumption has not shown significant changes. The national waste-generation rate for 2007 was an average 4.62 pounds per person per day, according to the EPA. That's a decrease of less than 1% of the 2000 average of 4.65 pounds per person per day. It's also a large increase from the 1980 figure of 3.66 pounds per person per day (*Municipal Solid Waste Generation, Recycling and Disposal in the United States, Facts and Figures For 2007*, document EPA-530-F-08-018, November 2008).

In spite of a high rate of consumption, Americans are showing an increasing interest in all sorts of green activities. Carbon offsets were originally designed to allow companies or governments to comply with the amounts of carbon dioxide they are allowed to emit. According to the Ecosystem Marketplace, about 5% of carbon offset purchases come from individuals trying to offset their everyday activities—not from organizations seeking regulatory compliance. We purchase green cleansers, even when the environmental claims are vague and the verification process nonexistent. We look for the recycling symbol, even though we may be ignorant about any actual postconsumer recyclability. We make statements about wanting to be environmentally friendly, but we still throw away millions of plastic water bottles.

Although only tiny portions of those plastic bottles are recycled, overall we are recycling more than we used to. We are consuming more, too. According to a 2007 survey from the American Forest & Paper Association, 87% of the American population has access to either curbside or drop-off recycling programs. The EPA says that folks are taking advantage of that convenience. The amount of waste that has been recycled or composted has been increasing steadily in the past 30 years. Our diversion rate in the 1970s was around 7%. The latest EPA figures place the diversion rate, including recycling and composting, at around 33%.

Market Difficulties

But what actually happens to all those diverted materials? When crushed glass is used as alternative daily cover in a landfill, is that recycling or disposal? The answer depends on whom you ask. The best use of a material always depends on how you define your objective. Recycling has become so common in our society that we have lost track of what we are trying to achieve. We often aren't asking what makes the most environmental sense. Even if we took the time to ask, there is no simple answer to that question. To paraphrase Tip O'Neil, all garbage is local. In the United States we have fostered the principle that more recycling is the answer, and this belief is the foundation for many regulatory and social decisions. As we continue our focus on recycling, we sometimes ignore other possibilities that may have their own environmental benefits.

Some items are collected for recycling even though they have no economic markets in this country and are shipped overseas for processing. Some items collected through recycling could potentially be dangerous or expensive to process in this country, and once again they are shipped overseas. In both instances, we ignore the environmental cost of transatlantic shipments, as well as the environmental practices of the receiving country. Unfortunately, that ignorance has an environmental price. We are often exporting materials to countries that have lax environmental regulations compared to our own.

The recent article in *The New York Times* on the falling commodity markets has informed the general public about the recycling industry's dependence on foreign markets. In a similar fashion, the recent *60 Minutes* expose on computer recycling informed many people about what happens to some of our discarded electronics. Prior to these high-profile stories, there was probably a general ignorance of what actually happens to collected recyclables. That ignorance, when combined with our righteous environmental attitudes allows us to ignore our true responsibility. We recycle, therefore that makes us the good guys. Meanwhile, we don't actually discuss what is the highest and best use for a discarded item.

Force majeure is a French phrase that means superior force. It's a common clause in contracts that absolves both parties of liability under unusual circumstances such as war, labor strikes, or "acts of God" (flooding, hurricanes, etc.). Some buyers of

recycling commodities whose contracts set purchase prices are renegeing. Many companies in countries such as China, India, and Bangladesh are refusing to complete orders, or they are claiming *force majeure* and insisting upon lower prices. Domestic markets are also facing financial difficulties. For instance, American auto manufacturers are one of the largest users of cast aluminum and their current demand for metal is almost nonexistent. These economic problems facing the recycling markets are not limited to the United States. In the United Kingdom recently, the *Telegraph* reported that up to 200,000 tons of items collected for recycling were actually incinerated or landfilled. This figure is expected to rise dramatically during 2009.

While dropping commodity prices have certainly affected the entire industry, companies that are producing a clean product are still able to find buyers. Though profits are less than before, the demand for high-quality products has not completely been eliminated. Single-stream recycling collection is a growing trend on a nationwide basis, but the quality issue may pause the expansion. In single-stream collection, all recycling materials are mixed together in one container, typically a rollout cart that is emptied with either a semi- or fully automated vehicle. The result is a less-clean product, especially as it comes to paper. Chips of broken glass become embedded in the paper and reduce the marketability of both the glass and the paper. Recycling companies that can offer the cleanest and highest quality product have the best chance of continued profitability.

Disposal or Recovery

In the United States, waste-to-energy (WTE) facilities have often been viewed as incompatible with recycling systems and even as direct competitors with recycling. Europe, however, has much higher recycling rates than the United States and yet makes much higher use of WTE than we do. Given that the pollution control standards in the United States are more stringent than some of the countries we export our materials to, isn't it worth considering such alternatives to recycling as WTE?

Plasma gasification is one the newer WTE technologies gaining recognition if not yet operational frequency. Green groups have called this technique a fancy type of incineration with all the associated polluting problems. Industry groups have touted plasma gasification as the solution for most of our disposal problems and vehemently oppose any comparisons to incineration. As usual, the reality is probably somewhere in between. Plasma gasification for waste disposal is similar to the plasma torches used for cutting steel. Although it is a high heat process, there is no combustion taking place. Temperatures a few feet from the torch are generally between 3,500°F and 10,000°F. Temperatures of the gas itself can be as high as 25,000 degrees Fahrenheit.

The city of Ottawa is the first city in the world to evaluate such a facility. Plasco Energy Group, in partnership with the city, has built a 75-ton-per-day commercial-sized demonstration facility. The facility is regulated under two special permits that allow operation at tighter environmental standards than is the current practice. As part of the wastestream, they are regulated to process up to 8% of not-commercially-recyclable plastics. Creating energy from recycling discards may have merit, especially when the alternative is sending the items to a foreign location that may burn the materials anyway. Construction of the facility was completed in July 2007, and the facility has been processing waste since January 2008. In addition, the Ottawa City Council has passed a motion for the city manager to complete negotiations for a full-scale 400-ton-per-day facility. You can read more about this project at <http://www.zerowasteottawa.com/en/>. Given how little is known about this technology, it's wise to begin with small demonstration projects. Hopefully, useful data will be captured and subsequently analyzed to assist us in making intelligent decisions about future disposal practices.

Government Standards

WTE may be an alternative for some hard-to-recycle items. However, there are many recycling commodities, such as paper and steel, that already have well-established processes for transforming discards into new materials. An increase in the recycling of these items should be encouraged, as it plays a vital role in a total waste management strategy. But we have long neglected the end use of recyclables. Part of the reason for the economic problems in recycling is the lack of demand.

For recycling to be economically feasible, there has to be a market into which the collected materials can be sold, and there also needs to be a market willing to purchase the items as raw materials for their products. There is a low-cost method the government could use to help stimulate recycling—a tool that has already been used in the past. During the Clinton administration, executive order 12873 required the use of recycled paper by executive agencies of the federal government. Section 6002 of RCRA requires federal agencies to give preference in their procurement to the purchase of specific EPA-designated recycled content products.

By mandating the purchase of products with recycled content, or by requiring a minimum amount of recycled materials in manufactured products, the federal government can help stimulate the buy-recycled loop. There has been a lack of research and development in this country devoted to recycling technologies. Too often, foreign countries have been willing to assume this burden, alleviating us of the need. As a result, we are dependent on them to process our materials.

Recycling technologies could also benefit from government investments. Such a program would not be a new concept. During the 1990s, the EPA awarded over \$7 million in grants to 36 states and several other organizations to foster economic activities that would create jobs in the recycling sector. In spite of poor market commodities, recycling related jobs are still an important part of our economy and could play an even more important role if we are willing to foster it. Although the federal Jobs Through Recycling (JTR) program is no longer active, some grant recipients were able to create business assistance programs that are still active

today. The North Carolina Department of Environment and Natural Resources recently released the report, *2008 Employment Trends in NC's Recycling Industry*, which found that private-sector recycling-related jobs within the states increased more than 13% since 2003. A copy of the study can be found at <http://www.p2pays.org/ref/46/45998.pdf>. Without the need for large government bailouts, small investments to foster the recycling economy can have a beneficial effect on job creation and the stabilization of recycling markets.

Green Progress

A possible beneficiary of investments in recycling technologies is the construction industry. The recycling of construction-and-demolition waste is on the rise. The US Green Building Council just celebrated its 15th anniversary. In the United States, as well as several other countries, the council's Leadership in Energy and Environmental Design (LEED) certification program has become the standard for measuring a building's sustainability. There is also a growing interest in recycled-content products in the residential building sector. Some products, such as Paperstone, a recycled paper kitchen countertop have a national sales-distribution network. Niche markets also exist for a variety of products. Common Ground, a green building supply store in North Carolina sells products from several national manufacturers, as well as locally made products. For example, Common Ground's concrete and glass countertop is not only produced locally, but all the raw materials used in the manufacturing process are also produced locally.

Product stewardship is another area that may have large rewards for the environment. This pollution-prevention movement involves all the stakeholders of a product, including manufacturers, retailers, consumers, and government officials. All parties are encouraged to look for opportunities to minimize waste and reduce potential environmental liability. Product stewardship is a voluntary approach that has its origin in the regulatory aspect of extended producer responsibility (EPR). EPR is common throughout much of the industrialized world, with the exception of the United States. It requires manufacturers to take responsibility for the entire life cycle of their products, including disposal. We have often avoided passing mandates that require EPR, but several voluntary programs exist in this country. The Rechargeable Battery Recycling Corp. is funded by battery manufacturers and provides free disposal of their products. Dell Computer Corp. accepts their old computers for proper disposal at no charge. There is growing support in this country from many local governments and environmental organizations for the implementation of EPR programs.

Looking Forward

This country has always been reluctant to regulate the marketplace or to place limits on consumption. Regardless of whether it's the size of a home or the size of a package, it seems un-American to regulate consumption. Instead, we use panaceas like plastic bag bans to help the environment.

In the absence of a reduction in consumption, it's critical that we take a long view of recycling and what it means for the environment. The author is not suggesting we stop recycling; rather we should make intelligent choices about all our options. The growing interest in climate change and the role that waste management practices play in greenhouse gas emissions will influence our future policy decisions. Because of the long time it takes to site waste management facilities, our planning scale needs to be in decades and not just in years.

Topics: [Recycling](#), [Outreach](#), [Operations](#)
