

The Future of Recycling in the US—Can It Pay for Itself?

In recent months, there has been media attention directed on the “ills” of recycling in the US in both the solid waste industry press, as well as national reports published in mainstream publications such as *Fortune*, the *New York Times*, the *Wall Street Journal*, and the *Washington Post*.

BY MARC J. ROGOFF

In short, the common theme of these articles is that recycling in the United States has stalled, and the situation is dire. How dire is it? Industry executives have argued forcefully that prices for recycling commodities have largely fallen to the point over the past several years that it is not economical for them to process recyclables and market them to largely Asian markets, which have increased their contaminant standards (a.k.a., the “Green Fence”). For those of us in the solid waste industry recommending programs to increase recycling as a means of promoting sustainability, the question now becomes: can recycling pay for itself in 2016?

Markets Are Squeezed—Recycling Crisis

The recycling commodity market has seen ebbs and flows over the past 35 years. The notion that it is the end of the world for recycling suggests that the current market situation fits the Yogi Berra quote, “It is Déjà vu all over again.”

Price volatility in recycling markets is almost a universal truth across the globe. Being able to manage the ever-fluctuating changes in market prices (Figure 1) can either produce success or break the community recycling program. Most recycling industry observers have agreed that prices for most, if not all, recycled materials tend to follow expansions and contractions in

the overall world or national economy such as major economic recessions and market crashes (Great Recession, Iraq war, Y2K fears, and oftentimes irrational market forces). There are, however, specific trends in particular industries that move prices for different recycled materials in entirely opposite directions. One can argue that the long-term, 30-year average of curbside recyclables market has moved up substantially from the average levels during the 1991–1993 Recession to the next economic downturn in the 2001–2003, and the next downturn in the Great Recession in 2009.

Experience over the past three decades has shown that communities that collect many different materials may experience

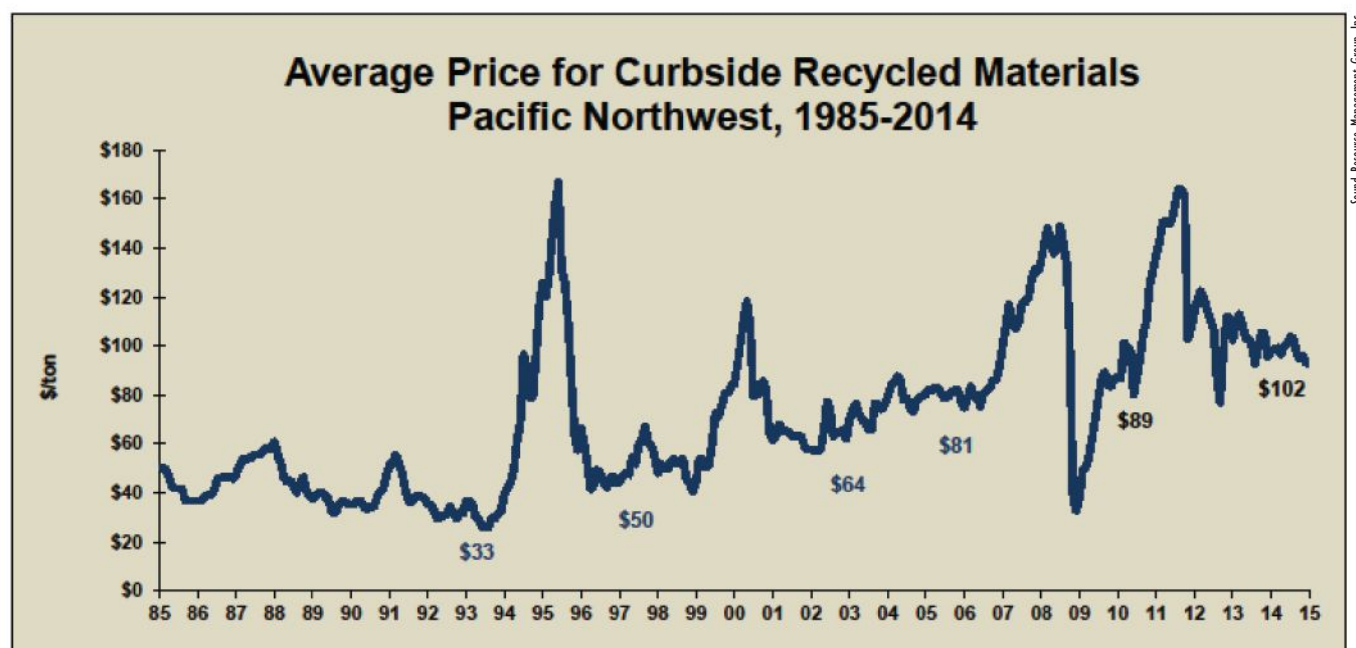


Figure 1. Long-term trend for curbside recycled markets—Pacific Northwest, 1985–2014

less revenue volatility over the course of an economic cycle. Nevertheless, curbside recycling programs that collect a wide variety of materials, such as residential mixed paper, newspapers, cardboard, glass, metals, and plastic bottles, may experience significant and pronounced revenue swings.

What Has Changed? Is Single Stream the Culprit?

This past year I attended Waste Expo, WASTECON, and the Waste 360 Recycling Summit, listening to all of the presentations by national leaders in our industry. A common theme by most, if not all, the presenters is that the introduction and expansion of single-stream collection and processing of recyclables have greatly increased the total volume of recyclables; however, contamination rates have increased along with processing costs. There are some who argue that the move to single-stream collection from the “blue bin, dual-stream model,” where the customer sorts the materials at the curb, results in more contamination and a reduced value of the recyclables recovered.

However, a review of data from both single- and dual-stream recycling programs suggests otherwise. I would argue that increased variety of container and packaging plastic over the past few decades is perhaps more responsible for the issue of contamination. There are literally thousands of different plastics now in the wastestream, making it almost impossible for the consumer to know what is recyclable. Is the bag in the cereal box recyclable? Is the cap of a pop bottle recyclable or only the bottle? What about the soiled liner in the microwaveable product? What about the aseptic juice carton? Clearly, the extra sorting effort at an MRF facility reduces profitability.

Let's Just Quit Recycling —It Just Doesn't Make Money!

One can argue that statement if you ascribe to the statements from some companies and editorialists. For the most part, these organizations need to achieve sufficient returns on their capital investments to satisfy the performance objectives of their major stockholders. Business needs to generate a profit, and if the revenue a recycling facility receives is solely based on the commodity value of the recovered recyclables, then significant financial problems can result when commodity prices fall below the target levels needed to provide the desired cash flow, profit, and resulting rate of return on

invested capital. However, the fact remains that while recycling markets are tight, there are smaller, regional or local recycling companies such as Eureka Recycling in the Twin Cities area and the employee-owned Recology in the San Francisco Bay area that have reportedly been able to be profitable under these market conditions and lower their customer rates.

In September 2015, the City of Dallas awarded a 15-year contract with, Fomento de Construcciones y Contratas, S.A. dba FCC, S.A., a large Spanish corporation, and

one of the largest European MRF operators, to construct and operate 120,000 tons per year, single-stream MRF at the City's landfill. The City had received seven proposals from major national and regional solid waste firms. Based on the City's evaluation criteria, FCC's proposal was the only one deemed to guarantee positive financial value to the City (\$22.8 million over the initial 15-year contract term). For example, FCC was the only company to agree that the City would not pay to process recyclables, even in a low commodity market.

Changing Times Necessitates Changing Solutions

Ban Materials

One way to improve the quality of the recyclables being marketed is to eliminate materials that are difficult to recycle. There are increasingly a number of cities which have banned plastic bags and polystyrene making the incoming recyclable wastestream easier and cheaper to process. These materials are oftentimes responsible for MRF downtime because the bags jam the wheels that are part of the conveyor systems.

Glass is another challenge. Glass has been a commodity that has been included in all recycling programs since the advent of most private and public collection programs. Glass is heavy and contributes significantly on a weight basis to community diversion goals. However, more than a third of the glass oftentimes breaks during collection, jams up conveyors and melts at material recovery facilities (MRF) facilities, and, as a result, contaminates baled material. Lastly, glass is made from a common and cheap material—sand. So the price for recovered glass is usually marginal. Some in our industry have argued for restricting or eliminating glass for these reasons alone.

This is not to say that glass recycling cannot be successful, particularly when local markets are available. For example, Deffenbaugh, which operates in the Midwest, has a successful glass recycling program mostly because they have a fiberglass manufacturing plant nearby that can use the material; therefore, they have a strong market, with low transportation costs.

Public Education

Public education is critical to a successful recycling program. Recycling starts with what customers believe can be placed in their recycling bins or carts. If they do not know what can and cannot be recycled, confusion results, which either reduces participation or increases the volumes of unacceptable materials that have to be processed and ultimately disposed of. With larger 64- and 96-gallon rolling carts, customers can fill the carts with more recyclable materials. However, more unacceptable materials such as household garbage can also be included, further exasperating contamination problems. For example, with the larger carts, customers are less likely to break down cardboard boxes, oftentimes with foam and plastic wrap materials inside, which are not recyclable. Compounding this

problem, customers sometimes toss things like garden hoses, clothes hangers, shopping bags, Christmas lights, and used clothing into the recycling carts, which increases the complexity of the processing required and increases recycling costs.

The problem is the lack of public education efforts that go hand-in-hand with the implementation of single-stream recycling programs. While some minimal education outreach is provided at the beginning of these programs, I have seen that the education program often stops months into the initiation of these new programs.

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Recycling Rate Stabilization Funds

This past spring, Casella Waste Systems, a Vermont-based regional hauler, started adding a “sustainability/recycling adjustment fee (SRA)” onto the bills for its residential, commercial, and municipal customers. The intent of the SRA is to balance out the volatility of the recycling markets and the ability of Casella to price and sell recyclables given the cost of maintaining an extensive and sophisticated recycling infrastructure. The SRA is designed to float so that customers receive a credit when the average commodity prices reach a high and pay more when the prices drop. Thus far, Casella reports that it hasn’t received many customer complaints on its new pricing model. Is this an anomaly or something to be considered by other haulers or processors?

Are Mixed-Waste MRFs the Panacea?

Mixed-waste MRFs are the most hotly debated topic in our industry. Those with long memories remember the “Dirty MRFs” in the ’70s and ’80s, which allowed customers to throw recyclables with their normal trash to be removed at the MRF facility. Most often than not, the product recovered had poor marketability. Today, the new, modern marvels called mixed-waste MRFs

use a variety of new and existing technologies to sort recyclables from a stream of mixed trash, many times with materials from single- or dual-stream programs.

The questions remain: Can these facilities produce a high-quality, marketable product, and can they provide a reasonable return on investment to their investors? Considering the recent closure of the Montgomery, AL, Infinitus Renewable Energy Park (IREP) facility, I would fathom a guess that the jury is still out on whether such facilities can be successful. The technology seems to work, but questions remain on financial performance.

Is Recycling in Crisis?

Lighter packaging, dwindling demand for newsprint, and lower commodity prices have allowed some to argue that it is no longer profitable for industry to continue to provide recycling services without local governments picking up their losses. So, should we sound the death knell for recycling in the United States? I would argue that this is not necessarily the case, and there is a way to cobble together a solution by confronting some of the myths being painted on the state of recycling. Here are my top 10 “Letterman” facts about recycling:

1. Recycling is not going away. It is now mainstream in most metropolitan areas of the country that are in close proximity to existing recycling markets. It considered by many to be an essential public service like police, fire, and street lighting, and cannot be turned off and on with the cycles and swings of the recycling market.
2. Recycling often is usually not profitable in many years due to the swings of the market. In my opinion, financial systems need to be developed to handle these economic realities through establishing “Rainy Day Funds” or Rate Stabilization Funds to continue to fund community programs when recycling markets are down.
3. Recycling should not be considered a free service. It takes money to send out the recycling truck. Perhaps more of the costs of recycling should be shifted to extended producer responsibility where some of the costs of recycling are included in the initial prices of the products themselves.
4. Change the “when in doubt, recycle it” philosophy. Consider bans of materials from recycling programs such as glass, plastic bags, and polystyrene. These contribute to contamination problems, poorer commodity prices, and disproportionately increase the average cost of recycling.

5. Though there are national trends, each metropolitan market has its own unique market conditions. As such, the economics of each market should be evaluated to develop an approach that optimizes the solid waste management system for that community.
6. Recycling continues to be a challenge no different than when the first drop-off facility and the curbside program was developed. The Chinese “Green Fence” and lower commodity purchase prices, light weighting, and contamination are putting stresses on the success of current programs. But, managing a successful recycling program has never been easy.
7. Recycling starts in the bin or cart. Communities need to invest continuously in recycling education. Public education is not a one-time thing. We all need to do a better job in educating what materials can be recycled, and what materials should be deposited in the garbage cart or disposed of by special waste collection. Recycling education needs to be a continuous investment.
8. Recycling markets need to be developed right here in the US. We have become so dependent on markets in Asia. America needs to develop recycling markets rather than ship these materials thousands of miles only to come back as packaging for LED flat screens bought in our big box stores.
9. Make processing contracts equitable for all parties. Follow the guidance released by the Solid Waste Association of North America (SWANA) and the National Waste and Recycling Association (NWRA) to develop mutually beneficial relationships that are cost-effective and produce high-quality service.
10. And, there is safety. Worker safety is often overlooked as our communities aspire to high and high recycling goals. Solid waste collection and processing remain the 5th most dangerous profession in the US, according to the Bureau of Labor Statistics. We need to find better ways to reduce accidents on the road and on processing lines.

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