

ISSUE BRIEF

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Recyclables: Changing Markets

Overview

The recycling industry has been very successful at providing environmental benefits including diverting material from landfills, conserving natural resources, and reducing greenhouse gas emissions by displacing the use of raw materials. This success was accomplished through the combined efforts of both the public and private industry to collect, sort, bale and market the recyclables to their end-markets.

For years, China has been the single largest consumer of recyclable materials generated in the United States. In 2016, approximately 41% of paper recovered in North America was exported with about a quarter of recyclable paper exported to Chinese mills. Similarly, over 20% of post-consumer bottles and 33% of non-bottle rigid plastics from the U.S. were exported in 2015. The European Union exports over 95% of its plastic to China, and the US and the EU are the largest exporters of recovered paper into China. China consumed over 50% of the world's recycled paper and plastic in 2016.

Since 2017, China has taken a number of steps, including establishing bans and imposing strict quality standards, to restrict recyclable materials imported into China. These measures resulted in significant impacts on recycling within the U.S., and the rest of the world. Because so much material had previously been absorbed by China, the impacts have been dramatic. As recyclers searched for outlets for their materials, other countries began to accept these recyclables. However, many of the countries were quickly overwhelmed by quantity of materials and they began imposing their own restrictions. Costs have increased and revenues have decreased.

Announcements have been made for a number of new facilities. However, it will still be some time before they can be developed to fully replace China. In the meantime, recyclers continue to struggle to manage recyclables programs at economically viable levels.

Background

- February 2017 - as part of China's broader "National Sword" campaign, customs enforcement began a one-year crack down on illegal smuggling of "foreign waste."**
- January 2018 - China bans 24 materials from being imported.** These include post-consumer plastic and mixed paper.
- March 2018**
 - The 0.5% quality standard for prohibitives goes into effect.** This requirement applies to all paper, paperboard and cardboard materials.
 - The Chinese Government announced a special action campaign entitled "Blue Sky 2018" focused on the banned materials.** This campaign is targeted at cracking down on smuggling of the banned materials.
 - The U.S. imposes tariffs on steel and aluminum imports.**

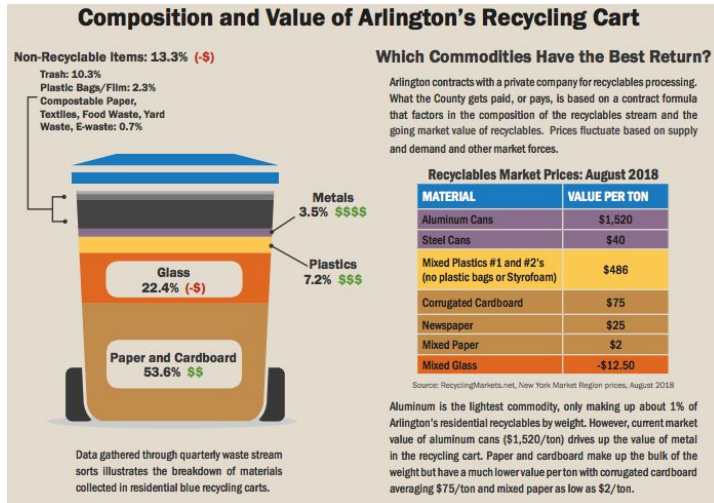
- June 2018**
 - Thailand temporarily bans plastic recyclables.** In August, they announce a plan to impose a complete ban within two years.
 - Norway proposes to amend the Basel Convention to include plastics.** This would provide additional restrictions on the transboundary movement of recyclable plastics. This will be considered in April 2019.
- July 2018**
 - China releases draft rules that propose a complete ban on recyclable imports effective 2020**
 - Malaysia stops issuing import permits for plastic recyclables.**
 - Vietnam announces it will no longer issue licenses for recyclables.** In October, this was extended until further notice.
- August 2018**
 - China imposes tariffs on recyclables imports.**
 - Taiwan proposes import restrictions**
- November 2018 – Malaysia stops issuing import licenses for recyclable plastics.**

Impact to U.S. Recycling

- Higher costs and lower revenues:**
 - Lower revenues due to depressed commodity prices.** The loss of the Chinese export markets has disrupted recyclable markets leading to lower revenues as some materials must be sold at significantly lower prices, sometimes even negative. As a result, the overall revenues from the combined recycling stream is depressed. Sample price differences between end of year 2017 and end of year 2018 are shown below:

Commodity	December 2017	December 2018
<i>Corrugated cardboard</i>	\$105/ton	\$70/ton
<i>Mixed paper</i>	\$32/ton	\$4.69/ton
<i>Aluminum cans</i>	70.19 cents/pound	60.19 cents/pound
<i>PET bottles and jars</i>	15.09 cents/pound	15.11 cents/pound
<i>HDPE</i>	38.88 cents/pound	38.69 cents/pound
<i>Glass</i>	Varies regionally	Varies regionally
<i>Contamination</i>	Varies regionally	Varies regionally

However, as can be seen on the composition breakdown of one municipality's typical cart, paper and cardboard and glass make up over three quarters of the weight of the cart meaning that those items disproportionately affect recycling revenues. Aluminum markets and prices, typically stable, have been impacted by a variety of issues, including tariffs. They continue to decline from December 2018 prices.



Source: <https://www.arlnow.com/2018/10/24/pain-in-the-glass/>

- **Higher processing costs.** In order to meet the new quality standards, MRFs are slowing down the lines and adding sorters. Processing at some facilities has been changed from negative sorts to positive sorts resulting in more effort to produce less salable material. These measures are reducing throughput and driving processing costs higher.
- **Higher transportation costs.** Regulatory requirements, a booming economy and a tight labor market already contributed to increased domestic freight costs. However, as material is diverted to international ports outside of China, shipping costs are also increasing as the backhaul advantage dissipates.
- **Higher capital costs.** To meet the higher quality standards, some MRFs are also accelerating and increasing capital expenditures.
- **Availability of outlets.** The ability of other markets, both domestic and the remaining Asian export market, to absorb all the recyclables have been severely strained as can be seen by restrictions imposed by other markets. Some materials have not been able to find an economically viable end market. With few markets available, incidents of stockpiling (or landfilling) material have been reported.
- **Stockpiling issues.** Due to storage capacity issues, stockpiling is not a viable option. Warehousing is also an issue due to availability of space and costs of facilities. In either case, processed bales can deteriorate over time which creates unacceptable safety hazards and unmarketable recycled product.
- **Regional variations.** The impact varies by region and local markets across the country.
- **Changing recyclables lists.** Some municipalities have changed materials they accept. Some programs are focusing on what materials can be recycled at a reasonable cost. Others are mandated to recycle certain materials without regard to costs. Lists vary significantly depending on the municipality. For example, Lancaster County, Pennsylvania's trim "Big 4" list limits acceptable materials to just four items (corrugated cardboard, plastic bottles and jugs with necks, metal cans, glass jars and bottles) while San Jose, California's list includes all that and much more (magazines, newspapers, cereal boxes, gift wrap, CD cases, PVC pipe, beverage cartons, aerosol cans, aluminum foil, pots and pans, and textiles).
- **Development of new outlets.** Numerous new or expanded facilities have been announced over the course of the past year which will provide new domestic outlets for materials, especially recovered paper. When these facilities will begin

accepting materials, however, is uncertain due to its dependence infrastructure development. Also, even when these facilities are open, they are not anticipated to fully replace the lost overseas markets.

Actions to Take

- **Ensure High Quality Recyclables** - High quality material is more likely to find a market. The new 0.5 percent prohibitives limit is far below any existing international standard. However, high quality material will be welcomed by both domestic and international markets. Focus on core recyclables to reduce contamination.
- **Work with the entire industry.** This is a global and an industry-wide issue, not a local or individual company issue. Our industry will benefit if we work together with city and state officials to develop solutions in the near term, and to work together for longer term solutions.
- **Communicate.** It is important to communicate with recycling partners to focus on quality and to develop solutions for your communities. See the communications strategy below for more suggestions.
- **Review contracts.** Recycling requirements may need to be amended through force majeure provisions as this is a global situation. In addition, both recyclers and municipalities should review contracting provisions to ensure fair and equitable contracts. NWRA and SWANA worked together to develop a Joint Advisory on Designing Contracts for Processing of Municipal Recyclables along with two attachments, one on auditing and the second on determining the value of recyclables. These documents should be utilized to inform future contracts. The documents can be found at: https://cdn.ymaws.com/wasterecycling.org/resource/resmgr/doc/resource_library/SWANA-NWRA_Best_Contracting.pdf
- **Talk with regulators.** States may need to approve temporarily suspensions of recycling requirements where there is no market.
- **Infrastructure improvements.** New facilities include newer technology into their facilities. However, retrofitting older facilities is necessary to manage the changing material stream. Older recycling facilities were designed to handle the materials that were more common twenty years ago before the collapse of newspapers and the advent of e-commerce. In addition, some materials may not generate sufficient revenue to justify the expense necessary for the sorting equipment. Assistance for equipment purchases may make recycling some materials more acceptable.

Communications Strategy

- **Develop a communication plan appropriate for your market area.** Make sure to be transparent in messaging providing clear information about the severity of the issue but avoid overstating it. Convey the commitment to working with customers and regulators. Provide recommendations on what should be recycled and how to minimize contamination.
- **Check facts and update employees, and external messaging:** As recycling markets change, communicate with employees and customers.
- **Contact your state regulatory agency to ensure that they are aware of the issue.** Ensure key stakeholders know that we have been working at the federal level. Be careful in communicating the serious ramifications of this issue, while recognizing that there is significant uncertainty.
- **Consider engaging local industry groups to help with the messaging.** Work with your state's industry associations to convey a single message to the public "from the industry."

- **Communicate with transparency to your customers, and work to shore up the long-term benefits of recycling to reduce public backlash.** Although the U.S. exports a significant amount of recyclables, domestic markets do exist and are expanding, as a direct result of China's actions.
- **This is a good time to develop and execute public education programs focused on quality.** Recycling the right materials correctly will help minimize the negative impacts of the current market constrictions. Work with local governments to focus messaging around recycled paper, cardboard, bottles and cans, and how to reduce contamination at the curb.
- **Public education programs need to be robust.** Public education programs need to be revitalized. Communication and education should be an ongoing effort. Right now, there is too much confusion which leads to further material contamination. Most recyclers when confronted with unacceptable materials in their recycling bin are surprised to find out that the material was not acceptable. With numerous municipalities making changes to their programs, this level of confusion is bound to increase rather than decrease. As a result, ongoing investment into public education is crucial.

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