

# A Circular Packaging Economy

*Earth911*

The COVID-19 global pandemic has affected every sector of the economy. But even before the arrival of COVID-19, the recycling industry was in crisis.

In 2018, China banned the import of recyclable commodities, and the U.S. suddenly needed to find a new way to process one-third of its collected recyclables. In the short-term, the ban was a disaster. But some companies saw an opportunity. Among them was DS Smith, a global packaging company that opened a new recycling plant in Pennsylvania last month.

The ideal outcome is a circular lifecycle for packaging, in which the materials used to make packaging and products are reused instead of relying on virgin materials mined or harvested from nature.

## How Recycling Works

Many people believe that when their recycling is picked up at the curb, it is delivered directly to a recycling plant where it is made into new materials. However, the recycling industry is [much more complicated](#) than that. Usually, curbside recyclables are delivered to a MRF (materials recovery facility, or “murph”) where workers and machines separate the mixed materials by type.

Mixed-waste or commingled recycling became popular because it is easier for residents; more people recycle than would if they had to sort their recycling. Some communities have even considered going for an [all-in-one approach](#), where garbage and recycling share a bin and are separated at a “dirty MRF.”

However, even regular MRFs are incapable of completely separating materials in the recyclable waste stream. System inefficiencies and [wishful recycling](#) combine for an average 25 percent contamination rate in baled recyclables from MRFs.

Recyclables with this contamination rate require further sorting before processors can make them into new materials. That is only cost-effective in places like China, where pay is low and there are fewer worker protections. In 2017, the U.S. sold roughly one-third of all collected recyclables to China for processing. When China stopped buying those materials, the [U.S. found itself](#) without a foreign market and without the capacity to process those materials domestically.

## A Circular Economy

After the Chinese ban, many MRFs stockpiled materials in the hopes of finding new markets — or for lack of disposal options — and [many communities](#) saw their recycling programs collapse.

It was apparent that the U.S. needed its own recycling plants. It also needed to find ways to provide those plants with a cleaner product than hitherto produced by

community recycling programs. In fact, we needed a [circular economy](#) for recyclable materials.

A concept advanced by the [Ellen MacArthur Foundation](#) in the U.K., the circular economy refers to an industrial economy that is restorative by intention; relies on renewable energy; minimizes, tracks, and eliminates toxic chemicals; and reduces waste through careful design.

## DS Smith Recycling Plant

[DS Smith](#) partners with the Ellen MacArthur Foundation in its sustainability efforts. The company began as a family-owned box-making business in London in the 1940s. Today, it operates in 37 countries, including the United States, to supply corrugated cardboard products.

DS Smith already operates two facilities in Reading, Pennsylvania, located about a mile apart. The paper mill supplies cardboard to their packaging plant, where the company manufactures boxes for commercial clients.

In March, they opened their [first North American recycling plant](#). They built their new 43,000 square foot facility adjacent to the paper mill. In addition to processing material from DS Smith's nearby corrugated packaging plant, the facility will recover paper for recycling to supply the mill. They will source their recyclable paper from local distribution centers, packaging facilities, retailers, and print shops. This ensures a cleaner product than processing mixed curbside recyclables. But the plant will still segregate materials including plastic, glass, and metal for resale.

Together, their paper mill, package manufacturing plant, and recycling plant can make, use, collect, and recycle new corrugated boxes in two weeks.

## COVID Response

Opening only days after the first U.S. death from COVID-19, the new recycling plant will strengthen the packaging supply chain. Because over 80 percent of DS Smith customers provide essential services, their packaging operations have qualified as essential. So far, they have avoided major disruptions to their operations. They are collaborating closely with several customers to develop pandemic-related products. These include customized packaging for customers that have switched to manufacturing health supply products, and packaging for home delivery of products previously delivered to physical retail spaces.

DS Smith has not publicized the distancing and safety procedures they are using to maintain full operations. But they have stated that employee safety is their first priority. If their worker protections prove sufficient, the circular economy of packaging they have established in Pennsylvania will serve as a model not just for paper, but for many other sectors of the recycling industry.

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