

BUSINESS

Through the looking glass, some envisioning rebound

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John Lair rattles a plastic bag full of broken glass.

There are bits of plastic, paper labels and chunks of food mixed in with the green, amber and clear — or flint — shards.

“And this is pretty clean,” he said of the glass-recycling sample from Waste Management’s materials recovery facility on Franklin Street. “Still, it takes a lot of work to clean this up.”

That dirty glass, which crumbles into unusable sand as it moves from single-stream bins to recovery facilities, is the bane of recyclers.

Glass tears up sorting machinery. As it crumbles, it becomes even more difficult to clean and sort. It costs big money to move glass around, unlike a bale of paper, plastic or aluminum. Any bit of contaminant — food, paper, pebbles, a chip of ceramic — can ruin a bottlemaker’s batch of glass.

The quiet secret in the recycling world is that beer and beverage bottles tossed into the recycling bin don’t actually get another life — as aluminum, paper and plastic do. Most recycled glass travels from bins to facilities to landfills, where it serves as a sort of heavy blanket atop trash heaps.

In an industry struggling with a sustained drop in commodity prices, cheap oil that makes new materials often less expensive than recycled paper, plastic or aluminum, and a slowing Chinese economy that is consuming less of this country’s recycled raw material, troublesome glass is yet another burden on stressed recyclers.

Lair has a plan to help alleviate that pressure.

His soon-to-open, \$11 million Momentum Recycling plant on a windswept no-man's land near the Northwest Parkway in unincorporated Boulder County plans to harvest that otherwise dump-bound glass from the Front Range's largest recyclers and process it for the state's gigantic bottlemakers.

"Where everyone else is thinking glass is this big problem, and it's one of the big reasons that recycling sucks right now, we think it's an opportunity," said Lair, whose Salt Lake City-based company has been processing recycled glass for use as insulation for seven years. "I'm perfectly OK with everyone else thinking it's a problem. If we can make glass recycling work in Salt Lake City — where half the population doesn't drink — then we can make it work anywhere."

Using a fleet of Austrian optical sorting machines that separate glass by color using high pressure air jets while diverting trash in a water-free, chemical-free process, Momentum Recycling plans to push 5,000 tons of glass a month through its facility, converting trashy glass into furnace-ready crushed glass known as cullet.

Lair has deals to pick up glass from Waste Management and Alpine Waste, the two largest recyclers in the state, and hopefully from Boulder's Eco-Cycle.

After the plant opens in September, Momentum will deliver its pristine cullet to Owens-Illinois' bottlemaking plant in Windsor, about 20 miles down the road from the the Budweiser brewery, and partners with MillerCoors at Rocky Mountain Bottle Company in Wheat Ridge. The two plants make more than 2 billion bottles a year, and a steady stream of top-grade cullet could cut their energy costs significantly.

"Glass has to be local. I don't know of any other metro area in the country where you have two bottle plants in the same region," Lair said. "I don't think it exists."

For every 10 percent increase in recycled glass flowing into Owens-Illinois bottle plants, the company sees a 3 percent reduction in energy use. The world's largest bottle maker regularly works with governments, industry and community partners to improve recycling infrastructure and grow the availability of recycled glass, said company spokesman Ryan McCarthy.

"We're excited about our partnership with Momentum Recycling in Colorado," he said. "Having access to a steady supply of high-quality recycled glass is important to us."

While Momentum's bottle-to-bottle recycling plant will process up to 80,000 tons a year of glass to feed the insatiable appetite at the two plants, the company's efforts will only slightly buoy Colorado's troubled recycling industry.

Across Colorado, which already ranks among the lowest 20 states for diverting trash toward other uses, recyclers are struggling. The economic slowdown in China — as the growing nation evolves beyond its resource-gobbling, infrastructure-based economy — has depressed commodity prices. The cheap price of oil has made virgin plastic nearly as inexpensive as recycled plastic. Municipalities that only three years ago relished a cash cow in their recycling programs with surging demand for post-consumer goods are now paying companies to take bales of plastic, paper and metal.

Those governments spent years nurturing recycling programs that have ingrained recycling as second nature. Nearly 34 percent of the country's waste is now recycled, compared with 16 percent in the early 1990s.

But with the volatility of commodity prices, recyclers in Colorado have suffered. Prices remain near all-time lows. Boulder County's nonprofit Eco-Cycle is fighting to stem mounting losses.

Eco-Cycle, which runs the Boulder County Recycling Center, is a social enterprise that spends part of its revenue on outreach and education programs. Despite the drop in prices, the group is forging ahead with new technology such as a Styrofoam densifier, the second in the state behind Alpine Waste's foam smasher. Eco-Cycle has helped Boulder County divert 34 percent of its trash into recycle bins for processing and a second life. Homes in Boulder recycle 58 percent of their garbage.

"Downturns in the recycling industry and the commodity market happen, and each time that spurs more innovation," said Eco-Cycle spokeswoman Harlin Savage. "We need to be encouraging investment in businesses like Momentum to take recycling to the next step and complete a full circle. Then we won't be so dependent on one market, like China. If we do that, we will have a more stable industry, and we will create a lot more jobs locally while reaping the environmental benefits."

Loveland's residents recycle 60 percent of their trash, which is probably the highest diversion rate in the state.

The city's recycling center takes just about everything: paper, plastic, cardboard, aluminum, tin, cooking and motor oil, car and home batteries, antifreeze, books, concrete, toilets, refrigerators and more.

It's like a mini-landfill, only nothing gets buried. More than 43 percent of the city's residents subscribe to curbside organics pickup.

The city once harvested thousands of dollars every month from end-users buying the recyclables. Now it pays those end-users to take them.

"We used to get checks. Now we get invoices," said Tyler Bandemer, Loveland's superintendent of its solid-waste department.

Still, the city hasn't considered curtailing service or raising rates.

"We know that putting this stuff in the landfill, even if it's cheaper, is not the answer," Bandemer said.

But the city has made tweaks. It asks residents to not throw glass in the single-stream bins. The city offers drop-off locations around the city for glass and asks residents to separate glass by color.

"The glass in the single stream makes everything less valuable," said Bandemer, noting that the city hopes at some point to remove glass altogether from its single-stream collection, requiring separation of the beer bottles that first triggered the recycling revolution.

"When you are trying to pinch every penny, it's a tough pill to swallow when you have something in there that lowers the value of everything else," Bandemer said.

The past year and a half has been really hard on Colorado recyclers, who once thrived as China and India gobbled a steady flow of plastic and metals.

"We all know we are at a low right now, so everyone seems to be saying let's figure out a way to make this work. No one wants to discontinue a recycling program, so they are looking at what they can do to keep the programs alive," said Yuri Freeman, president of the Colorado Association for Recycling. "From what I am hearing, we have hit the bottom and things should be going up."

Even when recycling is booming, Colorado falls well below the national average for diverting reusable trash from landfills.

In 2014, the state recycled about 23 percent of its waste. For the first time since state data collection was started in 2007, the annual statewide diversion rate for Colorado declined in 2013, dropping to 22.8 percent from 26.1 percent in 2012.

Across the U.S., more recyclers and cities are asking residents to simply toss their bottles. If glass is destined for the landfill, no need to send it to a recycling facility first.

"A lot of it goes to the landfill, which is not cool because then you lose the one benefit recycled glass has, which is the energy saving from remelting it," said John McDonald, Lair's partner in the Boulder County Momentum plant who founded both Boulevard Brewing and glass recycling plant Ripple Glass in Kansas City, Mo., creating a sort of closed loop for his beer bottles.

About 15 percent of the most finely ground glass at the Momentum Recycling plant — which isn't good for bottlemakers — is directed toward secondary markets for use in abrasives, large water filters and concrete coatings. Momentum landed a \$202,000 grant from the Colorado Department of Public Health and Environment's Recycling Resources Economic Opportunity Grant program, which supports recyclers who develop new markets for recyclables in the state.

"There is no market for recycled glass for abrasives or filtration in Colorado," Lair said.

As part of a law that started rewarding innovative recyclers in 2008, the grant program has distributed \$11.5 million to recycling companies that need equipment and machinery to help them develop new markets.

"Having new markets for glass is a win-win for everyone in Colorado," said Eric Heyboer, the administrator of the state's recycling resources grant program.

The grant is nice, but Lair is focused on recycling and selling everything that comes in his door. His facility has more than 30 air-filtering stations, which vacuum abrasive dust that can wear down his high-dollar machines. His team will gather the dust from those filters, bag it and sell it.

"We use everything," Lair said. "That's our business."

"What he's doing will be a great benefit for the state of Colorado," said Brent Hildebrand, who heads Alpine Waste's Altogether Recycling Facility in north Denver.

Hildebrand said the downturn forced Alpine to look at every facet of its recycling business and "find pennies."

"We had to look at every piece of the process," he said, noting how his team even trimmed its use of baling wire. "We look at the waste stream from a natural-resource perspective. What in there is recoverable?"

Last year, his team kept seeing more petroleum-based Styrofoam in its recycling bins, even though Alpine Waste told customers it didn't recycle the foam. Hildebrand didn't like sending it to the landfill, where it lingers forever. But packing the featherweight foam into trucks and shipping it to an end-user didn't make sense — until he bought a densifier, which smashes Styrofoam into heavy bricks, perfect for shipping.

"It makes a ton of sense," said Hildebrand, intending the pun.

Alpine Waste invested big when the market slumped. The company's \$5 million investment last year in its 9-year-old Altogether Recycling facility at West 53rd Place included the latest technology, enabling the facility to increase its capacity to 30 tons an hour, making it the highest-capacity recycling processor in the Intermountain West.

"If you look really hard at the waste stream, you can make sense of investing in this business," Hildebrand said.

After more than a year of declining prices for paper, plastic and metals, Hildebrand is seeing signs of recovery.

"March is the first month in a year we've seen an uptick," he said.

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