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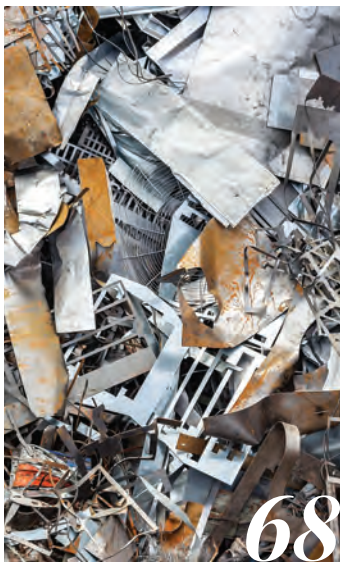
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The semantics of scrap

Last year, the Washington-based Institute of Scrap Recycling Industries (ISRI) announced it was working with language strategy firm Maslansky + Partners to "evolve our common language and bust misperceptions" about the recycling industry. That work resulted in a playbook called "A Common Language for the Recycled Materials Industry."

ISRI says the industry's common goals require a common language that talks less about scrap, the processes and machines used to process it and the size and impact of the industry in favor of the benefits seen in everyday lives, the resources that come out of recycling facilities and recycling's role in the supply chain.

> **"It's time to get out of stealth mode and let your communities know the good you do, even if your language isn't perfectly precise."**

As part of this common language, ISRI advocates for using the term "recycled materials," or what the industry produces, rather than "scrap," which focuses on the inputs, when talking with those outside the industry.

I took a class called "Precision Language" when I was at Ohio University, so I can get hung up on semantics and finding the best words to convey my meaning. To me, "scrap" is valuable material left over from industrial production or end-of-life products intentionally diverted from disposal. As with any raw material used in production, these materials need to be processed and packaged to industry-agreed-upon specifications before being consumed by facilities that transform them into new steel, aluminum, copper, paper and plastics used to make the products we use every day. I don't think it's a word that should be avoided.

When it comes to "recycled materials," I think of the steel, aluminum, copper, paper and plastics made from these scrap inputs rather than the scrap inputs themselves because, while that material has been recovered with the intention of being recycled, it's not recycled until it's used to create new products.

For these reasons and a healthy dose of stubbornness, I've been slow to adopt ISRI's preferred terminology. However, because ISRI says the playbook is "a guide for anyone talking to external audiences, including policymakers, advocacy organizations, business partners or the general public," I'm hoping I'll be given some slack as *Recycling Today*'s mission is to serve the industry.

ISRI says the goal of its playbook is to ensure the industry is speaking with a common language because it's part of a larger process to update the industry's image and strengthen its reputation. What can aid that further is educating the community about what you as recyclers do rather than attempting to fly under the radar, which has been the case for too long. It's time to get out of stealth mode and let your communities know the good you do, even if your language isn't perfectly precise. RT





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METALS, MERGERS & ACQUISITIONS

River Metals Recycling acquires Garden Street Iron & Metal's Ohio operations

Nucor Corp., a company that operates a network of electric arc furnace steel mills, has acquired Cincinnati-based Garden Street Iron & Metal's assets on behalf of its recycling subsidiary River Metals Recycling (RMR), headquartered in Fort Mitchell, Kentucky. The assets include one feeder and one shredder yard, bringing RMR's total number of recycling facilities to 19.

Nucor, based in Charlotte, North Carolina, says the purchase is consistent with its raw materials strategy and demonstrates its commitment to expanding the regional recycling platforms supporting the company's steel mills.

Garden Street was founded in 1958 by the Weber family, with Earl Weber Jr. serving as president of the company's Ohio operations until the sale. Weber tells *Recycling Today* he has retired and left the business. However, his grandson, Tyler Weber, plans to stay on to manage operations at the Cincinnati yard, which is set on 22 acres with three nearby rail spurs in Spring Grove, Ohio. The company's Cincinnati complex, which includes its auto shredder, serves retail and commercial customers.

Garden Street also operates a feeder yard in Harrison, Ohio, about 20 miles from its Cincinnati yard.

The 43 employees of Garden Street have been offered positions with RMR, according to Nucor.

"We are excited to welcome the Garden Street teammates to the RMR/Nucor family," says Bob Eviston, vice president and general manager of RMR. "This key strategic acquisition will allow us to increase our supply of sustainable raw materials for our growing steelmaking capacity in the region."

The purchase is designed to broaden RMR's footprint in the industry. Nucor says the company will institute its best-in-class equipment, operational protocols and safety



standards at the facilities, which will be rebranded under the RMR name.

In December 2021, another Nucor scrap recycling affiliate, Trademark Metals, purchased Garden Street's recycling facilities in Fort Myers, Florida, which were owned and operated by Rob Weber, the brother of Earl Weber Jr.

RMR says it is the largest scrap recycler in Kentucky and the Greater Cincinnati area. It operates in Indiana, Kentucky, Ohio and West Virginia and is a wholly owned subsidiary of Cincinnati-based David J. Joseph Co., a Nucor subsidiary and one of the largest scrap brokers/processors in the U.S., providing scrap brokerage, recycling and transportation services.

Recycling Today file photos



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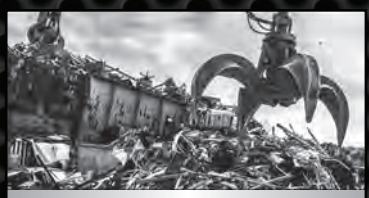
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PAPER

ISRI launches Fiber Recycling Readiness Tool

The Washington-based Institute of Scrap Recycling Industries (ISRI) has launched an online feature to help boost the recycling of paperboard packaging in the United States.

ISRI's new Fiber Recycling Readiness Tool is a research-based online resource to assess the compatibility of typical postconsumer fiber-based packaging found in the U.S. residential recycling system.

"Retail shelves across the country are filled with a growing number of fiber-based packaging, like paper, paperboard and corrugated boxes," ISRI President Robin Wiener says. "ISRI's new tool will provide brands, packaging developers and other stakeholders with clear guidance on whether their packaging will successfully pass through the current recycling infrastructure. This tool is a great advancement for the recycled materials industry."

Creating the tool involved an ISRI-commissioned study by Atlanta-based Moore & Associates looking at the current material recovery facility (MRF) and paper mill infrastructure in the United States.

Currently, many brands test their packages' recyclability by running tests at MRFs and at universities with knowledge of fiber recycling. "This tool represents a major advancement in that it captures the package design, processing and end use in one resource," according to ISRI.

"This tool can help brands use Design for Recycling principles for creating fiber-based packaging that can flow through the current recycling infrastructure," says Leonard Zeid, chair of the ISRI Fiber Recycling Readiness Tool and executive vice president at Moline, Illinois-based recycling company Midland Davis Corp.

Zeid says the new online resource can decrease contamination at MRFs and increase the quality of bales being sent to consuming mills.

"This is an exciting time for the fiber industry," he adds. "I want to thank our ISRI members and staff and the ISRI Brands Leadership Council that participated in creating this valuable recycling resource."

The Fiber Recycling Readiness Tool automatically scores a set of criteria and shares a color-coded result to determine whether the packaging meets the criteria (green), has challenges that require modifications (yellow) or does not meet the criteria (red).

The online resource also provides individualized feedback on design choices that could improve the package's recyclability.

■ METALS

Federal Metal Co. opens new facility in Arkansas

Federal Metal Co., a Bedford, Ohio-headquartered producer of copper-based cast alloys, has opened a facility in North Little Rock, Arkansas, to recycle postconsumer aluminum-copper radiators.

The company announced the $17.6 million project in March and said at the time it expected to create more than 40 new jobs within the next four years. The facility, dubbed "FedMet," is Federal Metal's first in Arkansas and spans 165,000 square feet and has the capacity to recycle more than 3,000 metric tons of aluminum-copper radiators per month.

"Major investments in new mill, foundry and refining capacity are underway in the United States for the first time in generations, and it's important the scrap industry here keeps pace to assure the domestic supply chain is well-fed," Federal Metal President and CEO Peter Nagusky says in a written statement. "It is wasteful when valuable scrap like these radiators are exported [to support non-U.S. manufacturing]."

In 2020, the company developed its proprietary premelt specification aluminum products, which offer cost savings to rolling mills that would otherwise use more expensive prime aluminum or aluminum remelt secondary ingot, Federal Metal says. As well, the company will use the North Little Rock operation to generate high-grade copper to feed its furnaces in Bedford and Columbia, Pennsylvania, and supply other domestic copper product producers.

"Importantly, this strategic location is convenient for our supplier partners and close to several key customers," Nagusky says.

"We are looking forward to a long partnership with the city of North Little Rock and the state of Arkansas. With their help, and the talent available to us within a mile of downtown Little Rock, this specialized operation will quickly emerge as the most advanced of its kind in the world."



■ PLASTICS, LEGISLATION & REGULATIONS

Break Free From Plastic Pollution Act reintroduced

Sen. Jeff Merkley of Oregon and Rep. Jared Huffman of California have reintroduced the Break Free From Plastic Pollution Act (BFFPA). The bill first was introduced in February 2020 by Sen. Tom Udall of New Mexico and Rep. Alan Lowenthal of California along with Merkley and Rep. Katherine Clark of Massachusetts.

Sponsors of the bill say it would reduce plastic production, establish recycling targets and protect frontline and fenceline communities from the burdens of toxic emissions by reducing production and changing industry incentives. The legislation also would shift the burden of cleanup to corporations that produce plastics, providing the financial motivation to end burning and dumping and establish a nationwide deposit return system to address beverage containers, support reusable and refillable systems and strengthen environmental justice protections by including the Protecting Communities from Plastics Act.

Merkley and Huffman say this version of the bill is stronger than the previous version because it adds new mandates for performance targets, including reducing single-use plastics and requiring all single-use beverage containers and packaging to be reusable, recyclable or compostable. It also includes stronger language for the elimination of toxic substances in beverage containers and prohibiting the use of toxic substances. Requirements for incorporating postconsumer recycled content into beverage containers have been strengthened and would exclude content generated by advanced recycling, chemical recycling, combustion, gasification, incineration, pyrolysis, solvolysis, thermal desorption, waste-to-energy, waste-to-fuel or any other chemical or molecular conversion process. Fenceline monitoring and environmental justice requirements for facilities, including community consultation, also have been reinforced.

The bill calls for 25 percent recycled content by weight and component by Jan. 1, 2032, increasing to 50 percent by weight and by plastic component by Jan. 1, 2050.

The Plastics Industry Association, Washington, opposes the bill.

"Instead of working towards compromise and common-sense policies, this new iteration of the Break Free from Plastic Pollution Act is even worse and less collaborative than previously, moving further from a realistic proposal," says Matt Seaholm, president and CEO of the association.



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■ MUNICIPAL & IC&I, MERGERS & ACQUISITIONS

Coastal Waste & Recycling makes Florida acquisitions

Boca Raton, Florida-based Coastal Waste & Recycling has completed two acquisitions that will add to its assets and operating locations in its south Florida market.

Coastal has acquired S&S Waste and In and Out Portables of Palm Beach County, Florida, the same day it also closed on its acquisition of AFS Recycling in Fort Myers, Florida.

"Both acquisitions reflect Coastal's commitment to enhancing its portfolio with outstanding businesses that share a focus on customer service and the importance of a strong team with shared values," according to Coastal Waste & Recycling.

S&S is a family-owned grapple truck debris removal and portable restroom company. "From its beginnings in 1987, founder Sheldon Mickelson and his team at S&S Waste have established themselves as pioneers in the grapple service business," Coastal Waste says.

"We are excited to bring the vast experience the S&S team has in the grapple business to further enhance our customer experience in the construction and demolition hauling sector," Coastal Waste & Recycling CEO Brendon Pantano says.

The acquisition of AFS Recycling, meanwhile, provides Coastal's sixth material recovery facility.

"Joining these two teams will enhance opportunities to provide greater opportunities to develop recycling programs for our commercial



customers," Pantano says. "The addition of AFS Recycling allows us to internalize a significant portion of the waste collected by our team on Florida's southwest coast."

Privately owned and backed by a global equity fund, Coastal Waste & Recycling now has 23 locations in Florida, Georgia and South Carolina. It offers residential, commercial, industrial and municipal waste and recycling services and has nearly 1,100 employees enacting 1.3 million service transactions each month.

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A VERY SLIGHT REBOUND

IN A MARKET THAT HAS BEEN CONTENDING WITH sinking prices since midyear, early November offered some relief to ferrous scrap processors and shippers as buyers paid a few dollars per ton more for many orders.

In early November, metals pricing and information services provider Davis Index started reporting higher bids for containerized scrap on the East and West coasts.

Offers from Turkey started coming in a little more frequently on the East Coast and for $3 to $6 per metric ton more than in October.

A more robust Turkish presence is leading to slower price increases for bulk cargoes on the East Coast, with shippers hopeful that improved steel rebar pricing will spur mills to up their bids.

For West Coast shippers, Taiwan and India showed a willingness to pay a few more dollars per ton for American scrap in November, Davis Index reports, noting some Indian ports are accepting 40-foot container loads of scrap, which some traders expect "will strengthen their buying powers and flows."

In the United States, automakers and the United Auto Workers (UAW) have reached tentative agreements after about six weeks of labor-management tensions that included strikes at specific plants operated by Ford Motor Co., General Motors and Stellantis.

It's uncertain how much of an impact the work stoppages had on either finished steel demand or steel production in the U.S.

Processors *Recycling Today* contacted express concern that a long, spreading strike would have an unpleasant effect on inbound scrap flows and prime grade generation and, eventually, demand for finished steel.

In a late-October news release announcing the tentative agreement, Ford CEO and President Jim Farley says, "We are focused on restarting the Kentucky Truck Plant, Michigan Assembly Plant and Chicago Assembly Plant, calling 20,000 Ford employees back to work and shipping our full lineup to our customers again."

> "We are focused on restarting [our assembly plants], calling 20,000 Ford employees back to work and shipping our full lineup to our customers again."
>
> – Ford CEO Jim Farley

Nine months into the year, Americans seem poised to purchase more than 16.1 million cars and light trucks, according to the U.S. Bureau of Economic Analysis. That figure has been on an upward trend through much of the year and, if reached, would represent a 17.7 percent jump from the 13.75 million vehicles purchased last year.

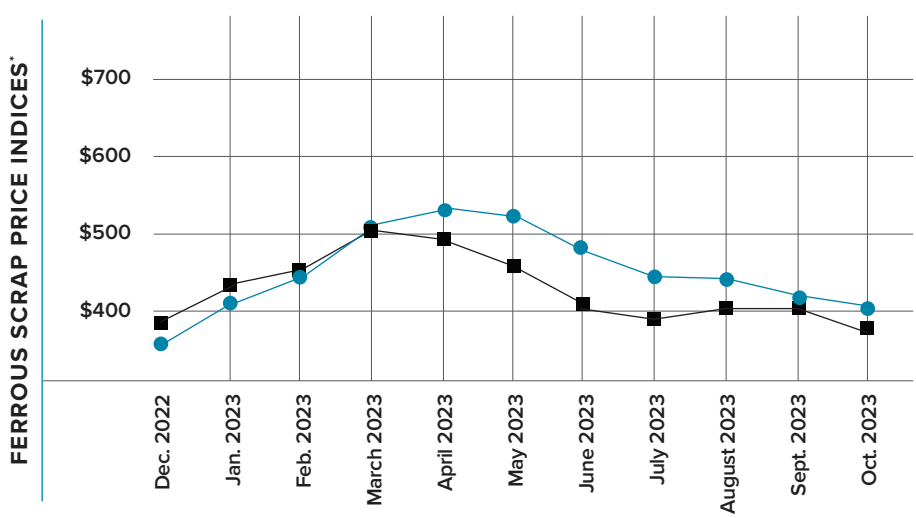
The U.S. construction market also has posted statistics showing steady activity in most parts of the country.

The Virginia-based Associated General Contractors of America (AGC), citing government data, reports construction employment totaled more than 8 million people in October, which, seasonally adjusted, represents an 0.3 percent increase from the prior month.

Additionally, executives and owners of ferrous scrap processing firms and melt shops continue to invest in the steel recycling sector as of late this year.

In early November,

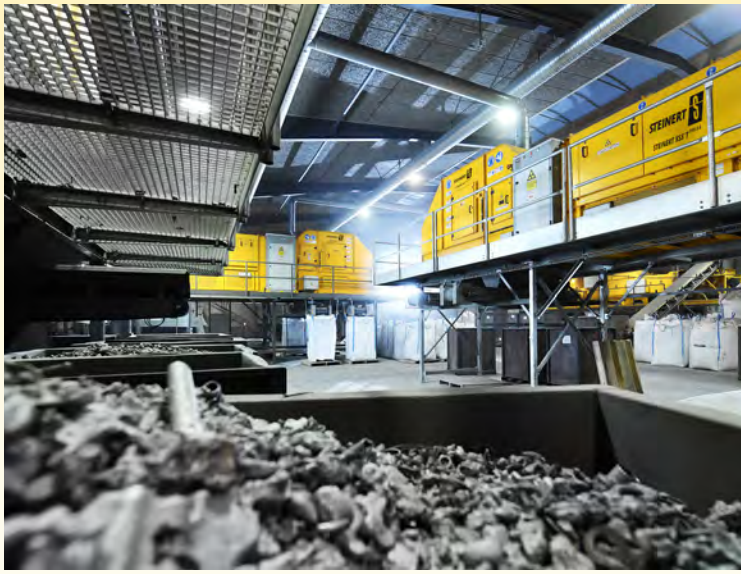
Additional Raw Material Data Aggregation Service (RMDAS) pricing from Pittsburgh-based Management Science Associates (MSA) is available on the *Recycling Today* website at www.RecyclingToday.com/rmdas.



● *Davis Index, No. 1 Busheling: National average price in U.S. dollars per gross ton delivered to U.S. consumer ■ **RMDAS Ferrous Scrap Price Index:** Per gross ton for No. 2 shredded scrap, defined as 0.17 percent or greater copper content, effective the 20th of each respective buy month

CLEAN ALUMINUM, SMOOTH PROCESS

STEINERT combines its technology with decades of experience to help sorting system operators produce furnace-ready aluminum.



Secondary aluminum producers demand high-purity shredded aluminum scrap, which requires extraction from a highly mixed stream of shredded materials. STEINERT has both the necessary sorting technology and decades of proven installation experience to help recyclers produce a 99.8% pure aluminum product.

X-RAYING FOR A CLEAN BILL OF HEALTH

X-ray transmission (XRT) technology is a critical piece of the sorting puzzle being perfected by STEINERT. XRT helps recyclers meet the aluminum production industry's high purity standards.

As deployed in devices such as the STEINERT XSS T EVO 5.0, XRT technology is used for dry density sorting of bulk materials, including shredded aluminum still mixed with metals such as magnesium. The XRT procedure detects material-dependent differences in the absorption of X-rays and then instantly classifies and sorts it by density.

The EVO 5.0 generation deploys XRT technology equipped with STEINERT's Multilayer Data Evaluation (MDE) function. The MDE feature helps replace the use of manual sorters in particularly challenging sorting tasks, such as magnesium detection. As well, it can solve the issue of detecting and distinguishing composite objects in the mixed metals stream.

Dependable STEINERT XRT technology precedes EVO 5.0 and has long helped American recyclers meet quality specifications. In Indiana, Trinity Metals is deploying XRT and several other STEINERT sorting technologies to convert mixed shredded scrap into marketable aluminum, red metals, magnesium and precious metals.

"We've worked closely with our consumers to understand the products they need in their foundries," says Trinity CEO Wade Conner. STEINERT'S sorting equipment, Conner says, "is state-of-the-art, and with STEINERT technical assistance, the equipment does more than what we anticipated it would."

THE GOOD FROM THE BAD

Recycled-content aluminum furnace operators can have very different requirements or specifications, meaning STEINERT equipment places a premium on versatility and multitasking.

The identification of solid magnesium is one key to the quality of secondary aluminum. With EVO 5.0 using the breakthrough MDE feature, STEINERT can now meet the most stringent criteria for particularly challenging sorting tasks, including detecting magnesium.

By separating free magnesium, the recycled aluminum produced can be used to meet tight aluminum alloy specifications with little to no magnesium reducing flux in the furnace.

Once installed, STEINERT equipment will stay on the job. Its AXM (Automatic X-ray Monitoring) feature offers automated calibration of the X-ray sensors, so plant operators achieve and maintain consistently high detection and sorting quality over the entire life of the X-ray components.

GROUNDBREAKING TECHNOLOGY FOR ALLOYS SORTING

In addition to constantly improving XRT technology, STEINERT offers producers of recycled-content aluminum access to innovative laser-induced breakdown spectroscopy (LIBS) sorting devices.

LIBS can analyze, in real time, aluminum and alloyed element content, such as copper, magnesium or silicon, which determines the precise type of aluminum alloy being presented. This process allows various alloys to be classified effectively, creating a furnace-ready product for alloys producers. This recovery of targeted alloys plays a vital role in reducing downcycling.

STEINERT LIBS equipment already is being used in Europe by AMAG Austria Metall AG. The company has become a pioneer in sorting aluminum alloys with its use of a STEINERT LIBS system starting in 2019. AMAG produces high-grade primary, cast and rolled products out of its purified aluminum scrap stream.

Demand for recycled aluminum will only grow. Purifying aluminum scrap in precise and automated ways is both a challenge and an opportunity. Recyclers ready to turn those challenges into opportunities will benefit from reaching out to STEINERT to discover the state of aluminum sorting technology in 2023.

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OmniSource, the scrap processing subsidiary of Steel Dynamics Inc., Fort Wayne, Indiana, purchased a 55-acre plot in Texas to build a greenfield processing facility.

The planned site in Dayton, Texas, about 35 miles northeast of Houston, will offer highway and rail access to the Port of Houston, according to a property development group involved in the project.

"The opportunity to begin operations in 2024 will empower us to quickly enhance our capacity to cater to our customers' demands and significantly extend our footprint throughout the southern United States," OmniSource President Miguel Alvarez says.

On the melt shop side, a steel producer recently cut the ribbon on expanded electric arc furnace melt capacity in Mesa, Arizona, while a foundry operator inaugurated its newest melt shop in North Carolina.

In October, Irving, Texas-based CMC placed its newest micromill in Arizona next to an existing one the company operates. The new furnaces will have an estimated nominal annual capacity of 500,000 tons.

Also in October, the Charlotte Pipe and Foundry Co. opened its new $460 million iron foundry in Oakboro, North Carolina. The facility replaces an aging one in central Charlotte, North Carolina, on land that will be redeveloped. The company melts more than 150,000 tons of scrap iron and steel annually to make its pipes and fittings.

Charlotte Pipe calls its Oakboro plant one of the largest and most modern foundries in the world. The company says it has invested heavily in capital equipment, environmental control technology and its people to operate an efficient, modern and safe foundry.

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COPPER PRICING BENEFITS FROM POSITIVE NEWS

MID-NOVEMBER BROUGHT GOOD NEWS in the form of a constructive meeting between U.S. President Joe Biden and President Xi Jinping of China, an avoided government shutdown and cooling inflation as well as falling interest rates and the value of the dollar relative to other currencies, John E. Gross of *The Copper Journal* notes as of Nov. 17, with the latter benefiting copper and precious metals.

COMEX copper futures settled at $3.74 per pound at the end of trading Nov. 17, while three-month copper on the London Metal Exchange (LME) also rose in value. In addition to the softer dollar, Reuters reports LME copper prices rose to their highest level in nearly eight weeks Nov. 20 fueled by hopes of improving demand after Chinese officials promised support for that country's property sector.

Despite the rising hopes, the current market is something of a mixed bag for copper scrap processors in North America.

Patrick Merrick, president of W. Silver Recycling Inc., based in El Paso, Texas, with operations in that state and Mexico, says industrial scrap generation remains strong, which he attributes to the growth of manufacturing in the region in response to nearshoring efforts. "I do think Mexico is seeing more growth than in the rest of North America," he says.

W. Silver has a diverse supply base, Merrick says, that includes automotive and consumer goods producers.

He predicts the regional growth in industrial scrap generation will stabilize in 2024.

However, a scrap processor based in the U.S. Northeast describes scrap generation in his region as being very low. "The trade is fighting for the little supply out there," he says, citing the weak economy has been designed by the Federal Reserve to cool inflation.

He says weak generation in the red metals sector has been met by weak demand. "Customers are ordering only as needed and maintaining very low inventories due to weak order books and high cost of carrying inventory. When customers are ordering, typically they are providing very little lead time, so we need to be ready when customers call."

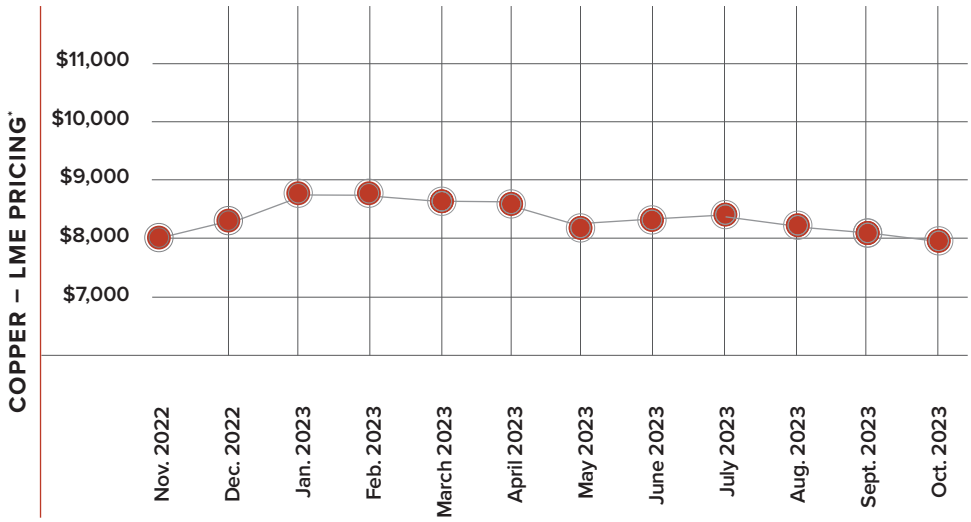
> "Customers are ordering only as needed and maintaining very low inventories due to weak order books and high cost of carrying inventory."
>
> – a copper scrap processor based in the Northeast

Merrick says he's found copper scrap demand to be more consistent than aluminum demand, which he describes as "choppy." He also says the gap between pricing for secondary and primary aluminum scrap grades has condensed as 2023 has progressed.

"There's less importance of segregating alloys than there was before," Merrick says. "Premiums are not quite as attractive as they were before."

Export demand for red metals also remains healthy, he says, with China being a primary destination.

"Export creates a competitive environment," the processor based in the Northeast says, adding that "spreads would most certainly be wider" without this demand.



*Average monthly settlement price, cash buyer, in U.S. dollars per metric ton; source: London Metal Exchange, www.lme.com



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HOPE FOR A DEMAND BOOST IN NEW YEAR

IN A YEAR MARKED JUST AS MUCH BY CLOSURES and downtime as by facility openings, companies across the paper industry are hopeful that a demand boost is on the horizon.

Since the start of the year, WestRock, Packaging Corp. of America, International Paper (IP), Greif, Domtar and ND Paper all have announced shutdowns in response to what has been a challenging market, with box demand reaching lows not seen in more than a decade.

"There are three big players who feed the majority of the industry, [and] each one of these players has managed supply and demand their own way," Bloomberg's Ryan Fox said during the Paper & Plastics Recycling Conference in October. "International Paper has been rolling downtime through their mills; WestRock's done permanent closures; [and] Packaging Corp. [of America] has done a … permanent idle of sorts of their new Wallula [Washington] mill."

While all three of those firms have reported less downtime quarter to quarter, each continues to report significant economic downtime compared with a year ago.

Memphis, Tennessee-based IP saw its downtime reduced "considerably" in the third quarter compared with the previous quarter, improving its operating costs. It still reported 458,000 tons of downtime at its containerboard operations—down from the 622,000 tons in the second quarter but up from the 398,000 tons in the third quarter of 2022. It is the fifth-straight quarter IP has taken downtime at its containerboard operations.

"Two quarters ago, I would not have thought we [would] still [be] in this type of demand environment, taking this type of economic downtime," IP Chairman and CEO Mark Sutton said during the company's third-quarter earnings call.

In previous earnings reports, Sutton indicated IP did not have any permanent closures on the horizon, but, in late October, the company revealed it would close its containerboard mill in Orange, Texas—a site that consumes recovered fiber—reducing IP's containerboard capacity by 800,000 tons annually.

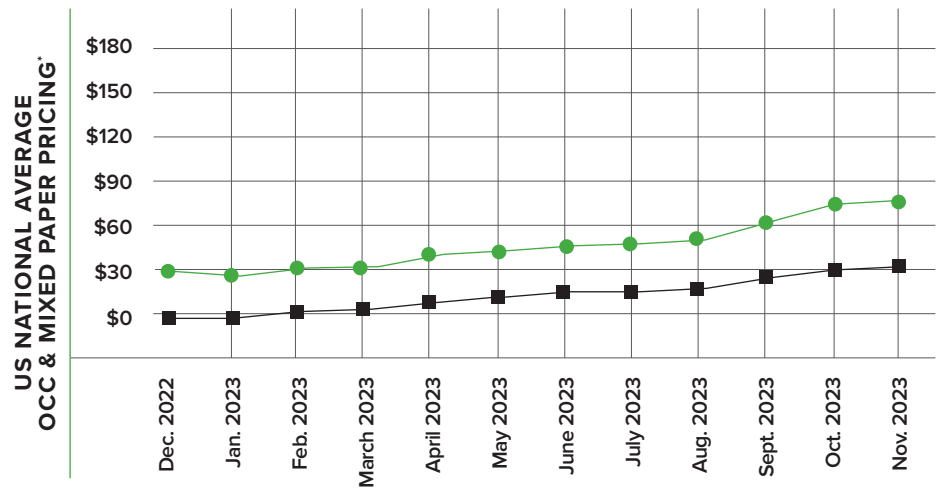
> "At this point, we think we've seen demand bottom. The outlook's more encouraging. We'll see where it goes from here."
>
> – Jay Royalty, senior vice president of containerboard and recycling, International Paper

"I think what changed is the depth and duration of this downturn," Sutton said of the closure. "It's not like anything we've seen since we built the industrial packaging business in the mid-2000s. We also have a long-term plan for that business, and the kinds of containerboard we need to make for the future, in some cases, is different than the containerboard we make today.

"We're taking this opportunity to do a reset, and then we have to get the timing of any future investment right. But that's what's changed."

Atlanta-based WestRock, the largest recovered fiber consumer in North America with a reported 5.5 million tons consumed in 2022, according to its sustainability report, took 391,000 tons of economic downtime—its most all year and the fourth-straight quarter it has taken

For a demo of Fastmarkets RISI's *PPI Pulp & Paper Week* pricing, please visit www.fastmarkets.com/thanks-for-your-interest-in-a-demo-of-our-portal.



● *OCC ■ **Mixed Paper (54);** Average U.S. dollars per short ton for open market purchases by mills for delivery in November as reported by Fastmarkets RISI's *PPI Pulp & Paper Week* Nov. 6. Prices used with permission from *PPI Pulp & Paper Week*. Visit www.fastmarkets.com/thanks-for-your-interest-in-a-demo-of-our-portal for more information.



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more than 200,000 tons of downtime.

The Washington-based American Forest & Paper Association's quarterly containerboard report shows mill inventories ending the third quarter at 370,500 tons—11.6 percent lower than at the end of last year's third quarter.

According to Fastmarkets RISI's *Pulp & Paper Week* for Nov. 6, the $75-per-ton national average for OCC is the result of an eight-month pricing run-up from the start of the year, when prices were $29 per ton. Year over year, OCC prices are up nearly 159 percent, while mixed paper, at $34 per ton, remains essentially flat.

As OCC prices continue to rise, officials at IP, at least, aren't completely discouraged by the market.

"You have to see demand improvement to see the market turn; we're seeing that," Jay Royalty, senior vice president of containerboard and recycling at IP, said during the earnings call. "There still is a supply-demand imbalance, but that's shifting both because of actions that are being taken on the supply side ... and also this demand improvement. So, at this point, we think we've seen demand bottom. The outlook's more encouraging. We'll see where it goes from here."

Export	Destination	New York	LA	SF/Oakland
Mixed (54)	Asia	82-85	77-80	72-75
OCC (11)	Asia	147-150	147-150	142-145
SRPN (56)	Asia	92-95	92-95	82-85
SOP (37)	Asia	207-210	217-220	207-210

Domestic	New England	New York	Buffalo	Midwest (Chicago)	Southeast	Southwest	Los Angeles	San Francisco	Pacific Northwest
Mixed (54)	30-35	30-35	30-35	35-40	35-40	30-35	35-40	30-35	25-30
OCC (11)	80-85	80-85	80-85	70-75	90-95	75-80	70-75	55-60	50-55
SRPN (56)	45-50	45-50	45-50	50-55	45-50	45-50	50-55	40-45	30-35
SOP (37)		130-140		120-130	130-140	130-140	155-165		90-100

*U.S. dollars per ton for open market purchases by mills. Domestic prices are FOB seller's dock for delivery in November as reported by Fastmarkets RISI's *PPI Pulp & Paper Week* Nov. 6, while export prices are FAS port of origin. New York includes ports in northern New Jersey and LA includes Long Beach and LA ports. Prices used with permission from *PPI Pulp & Paper Week*, www.risiinfo.com/sso.

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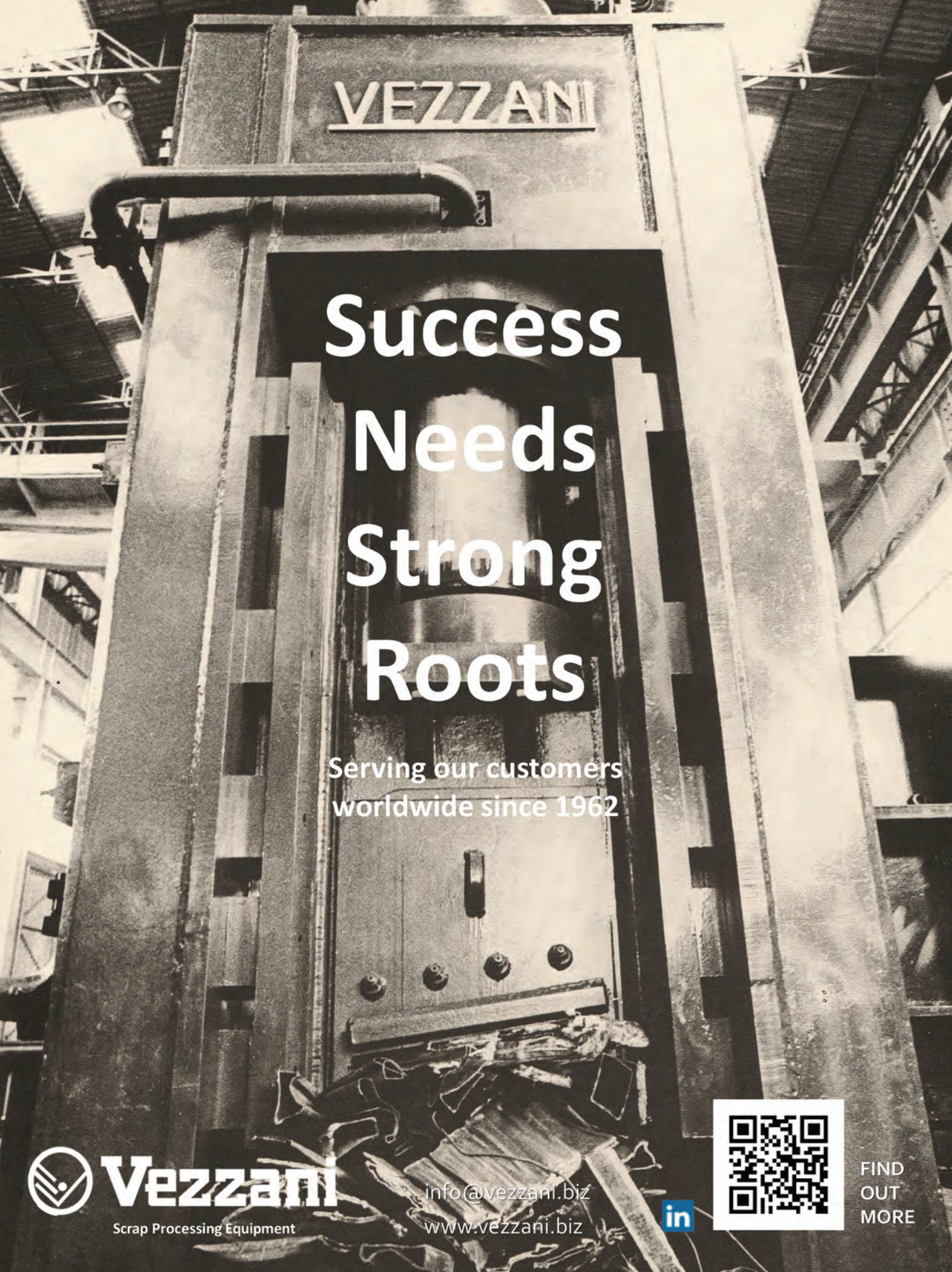
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CLOSING GAPS FOR A CIRCULAR ECONOMY

WHILE SPEAKING AT THE AMI PLASTICS WORLD EXPOS NORTH AMERICA in Cleveland in November, a panel of stakeholders from across the plastics value chain agreed increased collection is paramount to creating a circular economy in the U.S., despite challenges.

Brand owners have made recycled-content pledges for packaging with 2025 and 2030 deadlines; recyclers have built facilities or upgraded existing ones; and four states have begun enacting extended producer responsibility laws, but Nicholas Kolesch, vice president for projects at the Singapore-based Alliance to End Plastic Waste, said gaps remain in recycling collection.

"In most markets you have a quantity gap, meaning you're not getting enough material collected," Kolesch said. "But you also face a quality gap, so when [material] is collected, are those streams collected in a way where they're not contaminated or [are] homogeneous, making it easier for the recyclers to [process]?"

Kolesch said the big challenge in the U.S. is to get plastics into material recovery facilities so good-quality bales can then get to recyclers.

James Coomes, senior principal packaging engineer for Harrison, New York-based PepsiCo Foods' global packaging research and development science and technology team, represented a brand with recycled-content goals. He used his company's Frito-Lay snack bags as an example of a plastic packaging format that has slipped through the collection cracks.

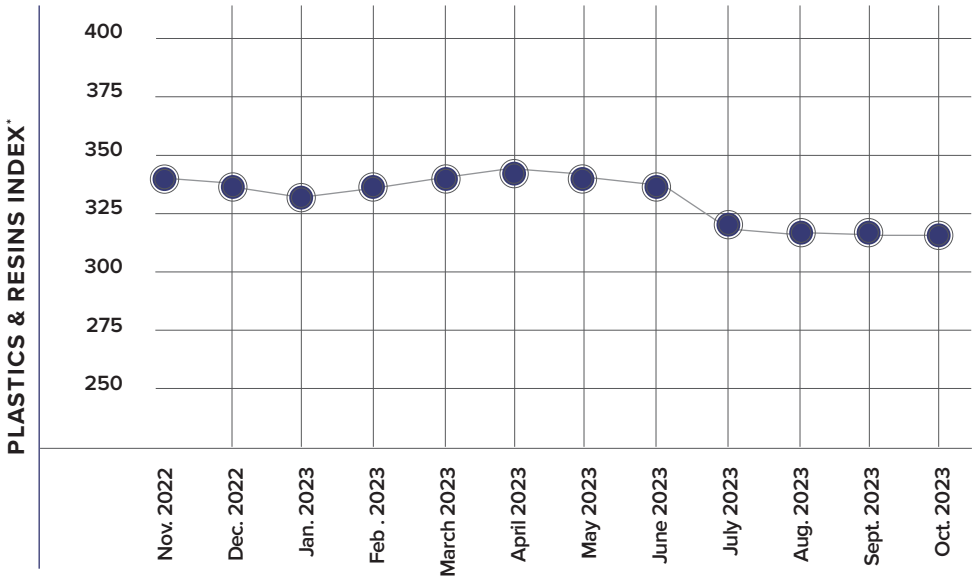
"Those [bags] are not collected in most municipalities, so, for us, that's a very big challenge," he said. "As we look and see where the U.S. is in this effort, we think it's quite far behind because there's lots of infrastructure changes that need to be made [and] lots of investments in new equipment and technologies that we know are out there. And, so, that's really where we'd like to see the focus to help get all those currently not-collected plastics into the system and finding the appropriate home."

> "All these [facilities] going into the ground are only valuable if there's material to process, so that's been a fight that we've fought for the last 30 years."
>
> – Scott Saunders, general manager, KW Plastics

Pete Keller, vice president of recycling and sustainability at Phoenix-based Republic Services, noted recycling rates for rigid plastic packaging range between 25 percent and 30 percent in the U.S. He added that Republic is trying to address how to collect more of that material, as well as flexible packaging.

Scott Saunders, general manager of Troy, Alabama-based high-density polyethylene (HDPE) and polypropylene recycler KW Plastics, said while the company has expanded twice in the last four years, collection of the materials it processes hasn't grown. He estimated that the U.S. recycling rate for HDPE is 27 percent or 28 percent, with the bulk of that material coming from states on either coast.

"All these [facilities] going into the ground are only valuable if there's material to process, and so that's been a fight that we've fought over the last 30 years," he said. "That's going to be a continued challenge, and what has to change to get more material is to get that homeowner to recycle."



*Producer price index is based on December 1980 average prices as 100; source: U.S. Bureau of Labor Statistics

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JEFF WAIR
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Sales Director

5 QUESTIONS ABOUT METALS RECOVERY FROM CHOP LINES

1 What are some common methods of metals recovery?

Operators have tried many methods to minimize losses, and some work better than others. Some methods include:

- recirculating, which takes up valuable production capacity and creates metal dust that's lost in the dust collection system;
- screening, which works well with larger fractions, but you still lose metals, and the screen requires cleaning;
- water tables that cause oxidation when the metals get wet, costing you value; and
- electrostatic separators that are difficult to maintain because of dust from the wire chopping line.

If you're operating a wire chopping line and are processing anything other than No. 1 high recovery insulated copper wire (ICW), chances are you're losing a minimum of 3 percent and as much as 20 percent copper in your waste.

ERS specializes in systems to recover metals from all types of materials, such as ICW, IAW (insulated aluminum wire), ASR (auto shredder residue), ASR fines, aluminum-copper radiators and more. With this experience, we have developed processes to recover metals as small as 2 millimeters.

2 What is ERS' solution?

We have proven methods for recovering all metals.

First, we use a "balling" mill to ball up metal, making separation easier. The balling of the metal doesn't trap contaminants and doesn't affect commodity purity. Next, we use Guidetti separators that have adjustments for air flow, vibration frequency and table inclination, so they can be adjusted to the material being processed. They can be arranged to produce three fractions—heavies, fine metals and waste. They are also very user-friendly.

If you have more than one metal in the material mix—copper and aluminum—we take the mix to a Multi-table. It's easy to separate materials if they are similarly size but with different densities. The Multi-table incorporates a trommel to size the metals, then separates them, creating two clean metal fractions.

3 Will the ERS Metal Recovery System work on all chopping lines?

To date, we have put our metals recovery system at the back end of most major chop lines manufactured today. We've replaced water tables and electrostatic separators and have installed systems to process the middling and waste fractions to negate the need to recirculate material.

We have metal recovery systems to process waste and tailings from 200 pounds per hour to more than 10,000 pounds per hour.

4 What does it cost to operate the system?

Depending on the size of the system, the operations cost pennies per pound, including wear parts, electrical, labor and maintenance.

5 How can I find out how much metal I'm losing in the waste?

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From left: Elliot and Kevin Gershowitz of Gershow Recycling

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GERSHOW RECYCLING
AT A GLANCE

PRINCIPALS: Founder Sam Gershowitz, Kevin Gershowitz, Elliot Gershowitz and Joe Bertuccio

LOCATIONS: The company's headquarters and largest processing facility are on the same site in Medford, New York, with nine other locations in Brooklyn, Valley Stream, Freeport, New Hyde Park, Huntington Station, Lindenhurst, Bay Shore, Riverhead and Farmingdale, New York.

NO. OF EMPLOYEES: 750

WEBSITE: www.gershow.com

EQUIPMENT: The Medford facility is home to the company's MTB Cable Box, which was supplied by Wendt Corp.; auto shredder; and nonferrous recovery system, which features a Mega Batch Feeder manufactured by U.S. Conveyor Technologies and eddy currents from SGM Magnetics. Gershow also operates shear/baler/loggers, mobile shears, material handlers, hundreds of roll-off containers ranging in size from 10 yards to 80 yards and more across its network of processing sites.

SERVICES: Gershow Recycling provides retail and commercial scrap buying, including ferrous and nonferrous metals, paper and plastic; ferrous and nonferrous scrap processing and prepared scrap sales; construction and demolition waste transfer; and solid waste transfer.

Attention to quality has contributed to Gershow Recycling's growth on Long Island, New York.

BY DEANNE TOTO

Vision can be defined as unusual discernment or foresight, and it's a gift Kevin Gershowitz says his father, Sam, has. It appears to be a trait Kevin and his twin brother, Elliot, also inherited as the second-generation owners and operators of Gershow Recycling.

"Regardless of the decade, what has distinguished us, besides being smart, putting in hours [and] having good financing or cash flow, is that the leadership at the time always has had vision," Kevin says.

THE EARLY YEARS

Sam founded Gershow Recycling in Medford, New York, on Long Island, in 1964 with little more than a tractor-trailer, a boom truck and a portable car flattener. The company, then named Gershow Auto Parts & Wreckers, specialized in recovering cars from the region's landfills. He had one employee at that time.

Sam was aided in his early efforts by Joe Bertuccio, who he hired away from a towing company when he was 18. Sam and Bertuccio purchased used equipment and refurbished it (or as Bertuccio says, "Sam purchased junk that I mechanically kept alive."), building a company that eventually would expand to operate 10 scrap processing sites in Long Island's

AN UNEVEN PLAYING FIELD

Gershow Recycling operates an auto shredder in Medford, New York, on Long Island, which is designated a nonattainment area in terms of air quality by the U.S. Environmental Protection Agency (EPA). Nonattainment areas do not meet (or contribute to ambient air quality in a nearby area that does not meet) National Ambient Air Quality Standards as defined in the Clean Air Act Amendments of 1970. Given that, the company must install emissions controls on its shredder.

"I would not make the argument that we should be exempt from doing it," Kevin Gershowitz says of installing emissions controls. "As recyclers, it is our job to do better at protecting the environment. ... I would make the argument that the playing field needs to be kept level on a local level and on an international basis. The cost of emission controls is incredibly expensive to purchase and operate. If Congress is going to require this, then Congress should not allow shredded scrap to be imported into the U.S. if it was not produced from a shredding plant that has the same emission controls demanded of U.S. operators."

Gershowitz adds that emissions controls represent substantial costs. "In some instances, the controls are worth more than the actual shredding plants themselves," he says. "And they have a real cost of operation. A shredder with an emissions plant is expected to have $12 to $15 per ton in added cost. That's significant."

As a nationwide industry mandate, Gershow says these added costs would be factored into the cost of production. Without that, he says, "that cost has to be absorbed by the individual company."

While buying scrap is local, selling it is not, he says. Therefore, uneven regulation puts the company at a competitive disadvantage to those that do not face the same mandate.



Suffolk and Nassau counties and in Brooklyn, New York.

"It would have been cheaper for us to buy new [equipment] if we knew better, but we couldn't afford new; we had no money," Bertuccio says of the early days.

Now 70, Bertuccio is a principal and Gershow Recycling's vice president of operations. He's one of many of the company's long-tenured team members.

By 1973, Sam was ready to put in an auto shredder, but his brother and business partner at the time, Lou Gershowitz, wanted nothing to do with such an investment, which he thought was a gamble, citing a lack of available cars to process.

But Sam wanted to move forward with the investment. However, the town blocked the move, which led to litigation. Seven years later, in 1980, Gershow Recycling would succeed in court and begin to install its shredder, Sam says.

"In 1973, you could probably argue that Uncle Lou was right," Kevin says of his averseness to installing the shredder. "A lot of companies try to build volume first and then add machinery."

But Sam knew the volume would come, Kevin adds, as he has with many of the company's investments in processing capacity. "It was about a vision for the future, planning for the future [and] putting investments in things that you may not see any benefit from for years to come," he says.

A LARGER FOOTPRINT AND GREATER REACH

Sam's vision also extended to acquiring more land around the company's Medford yard, which facilitated the site's expansion in the ensuing years. At 60 acres, the Medford location is home to the company's auto shredder and nonferrous recovery plant as well as its MTB Cable Box wire chopping line supplied by Wendt Corp. of Buffalo, New York. The site also has significant rail siding infrastructure, and 6 acres of the site soon will be home to a 38,000-square-foot rail-served construction and demolition (C&D) debris transfer station.

Given its geography, roughly 50 percent of Gershow Recycling's sales are to the export market. "Domestic sales have been good for us; we like to participate in the domestic market, but we are also in a very difficult place for transportation," Kevin says.

The company's rail investment in Medford has the potential to change that, however. "By adding the railroad capacity, we will be able to supply the domestic market in a better fashion and more importantly remove trucks from traveling on Long Island's congested roads," he says.

GOING BIG IN NONFERROUS RECOVERY

While Gershow handles some production scrap, Elliot says obsolete ferrous scrap

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it dreams of being a sports arena



Sure, our logo's changed. But our commitment to recycling hasn't. Nope, you're not seeing things. CMC has a whole new look. It's an exciting update intended to honor our past while declaring our future—as a more complete provider of dynamic solutions for the construction industry. But some things haven't changed. Like our commitment to recycling. After all, we've been helping turn yesterday's scrap metal into tomorrow's highways, stadiums and other structures for more than a century. And we're just getting started. **cmcrecycling.com**

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and shredding comprise the company's core business. However, with ferrous shredding comes the need for nonferrous separation, and Gershow recently invested in its nonferrous sorting capabilities. The company spent six years designing and building the 100-ton-per-hour plant in Medford.

While Elliot says Gershow Recycling didn't set out to build North America's largest zorba plant, that's what the company did. The plant produces fractions of eight different sizes and features 18 eddy currents from SGM Magnetics, headquartered in Italy with U.S. operations in Bradenton, Florida. It also includes one finger screen, one trommel and five BIVITEC screens from Aggregates Equipment Inc., headquartered in Leola, Pennsylvania.

The plant is fed using a Mega Batch Feeder (MBF) made by U.S. Conveyor Technologies Mfg. Inc., Mackinaw, Illinois. Kevin describes the unit as a "heavy-duty piece of machinery." He says it rotates only nine times per day and gets virtually no wear. "That piece of machinery will outlast every other piece of machinery," he adds.

The MBF is 70 feet long and 8 feet wide. Fully loaded, it allows for approximately 115 tons of material (or 240 cubic yards of auto shredder residue) to be loaded and metered to the plant's screening system.

The MBF is fully automatic and does not require an operator. With Gershow Recycling's previous plant, three payloaders and two skid steers were needed to feed it and clear material. Now the company uses a single loader to do both jobs, Kevin says.

"One of our constant goals is to be a better neighbor," Elliot says. "Our previous zorba plant was an outdoor plant. Our new plant is enclosed inside a 40,000-square-foot building. While indoors is a huge advantage to equipment maintenance, employee retention and, most importantly, overall safety—it is significant in our steps to be the best industrial neighbor we can be," he explains.

The MBF discharges to a vibratory feeder that delivers material to the infeed conveyor, which is equipped with a programmable logic controller interface to control the MBF's motors, allowing continual flow adjustment and ensuring a consistent processing rate.

Joe says the investment in the high-capacity and high-efficiency nonferrous plant was needed because its previous



plant was handicapping the company, even though it was producing zorba with 95 percent to 96 percent metallic content.

Now, Gershow produces 98 percent metallic zorba. "That was a goal of the new plant," Elliot says. "It's easier to sell a higher-quality item than a lower-quality one."

However, even with the previous nonferrous plant, Kevin says Gershow Recycling didn't experience liquidity issues with its zorba and could move it in all markets.

With its previous nonferrous line, he says the company produced the quality needed to sell into China even after that country increased purity requirements for nonferrous scrap imports. "You can make the argument that for years we were overproducing a quality that didn't need to be," Kevin says. "But during that time frame, we were not stuck with inventory. We were able to move every pound we had, whereas other members of our trade were stuck with inventory.

"One of our advantages is that we're on an island. One of the disadvantages is that we're on an island," he continues. "We're in the Northeast; we don't have a lot of consumers [and] we don't have a lot of zorba buyers, so to distinguish ourselves and to have liquidity in a sale, having a higher quality item gave us more ability to have liquidity and make the sale."

CONTINUED ON PAGE 95

6 KEYS TO EFFECTIVE MAINTENANCE FOR RECYCLING COMPANIES

Recycling companies can only fulfill their important role if the equipment they rely on is in good working order. The machines used to sort, minimize, and break down recyclable material is essential to their operation. But there are many ways to tackle the ongoing project that is machine maintenance. The strategies used to manage upkeep of equipment that ranges from conveyor belts and sorting machines to compactors and shredders can make a major impact on the viability of a recycling operation. Getting the strategy right, can keep your recycling operation running smoothly.

WHY IT IS IMPORTANT TO OPTIMIZE YOUR MAINTENANCE PROGRAM

The cost of subpar maintenance practices is substantial and can significantly impact a recycling company's bottom line. Relying solely on a reactive or run-to-failure maintenance strategy can lead to machine downtime and urgent repairs from external vendors. Over time, these avoidable breakdowns can shorten asset life for expensive equipment and increase the frequency of work stoppages.

With a relatively small investment in proactive maintenance strategies, recycling companies can avoid the most significant equipment-related expenses and impacts to productivity. In addition, companies subject to regulatory oversight may be required to take and demonstrate efforts to maintain operation through proactive measures.

FEATURES OF AN EFFECTIVE RECYCLING MAINTENANCE PROGRAM

Any thoughtful maintenance strategy must incorporate a few key characteristics in order to achieve the right balance between investment in proactivity, and minimizing overall maintenance costs.

1. **Regular Inspections and Preventive Maintenance:** Routine equipment inspections help recycling companies identify potential equipment issues before they cause problems. Implementing a preventive maintenance schedule for these inspections as well as routine equipment servicing can help prevent downtime and extend equipment lifespan.
2. **Training and Development:** Training programs for maintenance staff help ensure the whole team is adept at handling and troubleshooting your equipment issues. Well-trained personnel can perform tasks more efficiently and reduce the risk of errors or rework.
3. **Inventory Management for Spare Parts:** An organized inventory of spare parts helps reduce repair time and avoid excessive shipping costs for last-minute parts purchases. Well-managed inventory can also minimize waste due to over-purchasing of parts that eventually become obsolete before they can be used.
4. **Technology:** A Computerized Maintenance Management System (CMMS) streamlines maintenance processes, making it easy to track asset history, schedule work orders, and monitor maintenance costs. A CMMS can provide visibility and accountability for the critical aspects of your maintenance strategy as well as key insights for more informed decision-making.
5. **Condition Monitoring and Predictive Maintenance:** Condition-monitoring technology such as IoT sensors tracks equipment data in real-time. Marrying the asset data from IoT sensors with the maintenance history in a CMMS can identify patterns that can enhance your predictive maintenance program.
6. **Documentation and Record-Keeping:** Comprehensive records and maintenance histories provide the context needed when making important data-driven decisions such as when to repair or replace a piece of equipment. It also provides insight into productivity and cost of maintenance operations, and helps you stay audit-ready.

HOW A CMMS EMPOWERS RECYCLING COMPANIES

A CMMS streamlines overall maintenance operations for recycling companies – automating preventive maintenance, capturing asset and maintenance history, and making it easy to manage parts, POs, and vendors.

Here are some of the benefits of implementing Limble at your recycling facility:

- **Centralize maintenance operations.** Recycling centers often rely on a wide variety of equipment. A CMMS serves as a central platform to schedule, track, and manage maintenance tasks across them all. It also serves as a hub for all maintenance team activity, streamlining communication and information sharing.
- **Automate preventive maintenance.** Manually managing preventive maintenance can be time consuming and prone to error. Limble makes it easy to set up PM schedules tailored to each asset with detailed instructions and parts information. Technicians are assigned PMs and follow checklists, log notes, and close out completed tasks, giving managers real-time visibility with Limble's mobile app.
- **Access asset history & maintenance reporting.** Whether you're preparing for an audit, evaluating productivity, or looking for failure patterns, Limble provides all the historical data you need. The Global Dashboard automatically tracks key metrics over time like cost of operations, MTBF, MTTR, and employee productivity. You can also build and share your own custom reports to track the KPIs important to your organization.
- **Manage parts, POs, and vendors with ease.** Use Limble to manage spare parts and preferred vendors. Attaching parts ensures your team knows exactly what they need in order to complete the task, and QR codes make it simple to check out parts and keep inventory up-to-date. Setting parts quantity thresholds will notify you when inventory is running low so you can reorder and eliminate the risk of downtime caused by out-of-stock critical parts.

STRIKING THE RIGHT BALANCE FOR YOUR RECYCLING PLANT

Investing in the right maintenance strategies can go a long way toward advancing productivity and reducing costs at recycling companies. Just like other industries that rely on heavy equipment, an approach that combines thoughtful reactive maintenance with well-planned proactive steps to maintain critical equipment can achieve the right balance. By incorporating these best practices and ensuring your team has the right tools and technology, organizations can begin to see quick improvements that will only grow over time.

To learn more, visit limblecmms.com.

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BANO'S RIPPER FRANK
TEARS PAST EXPECTATIONS

The first-of-its-kind preshredder has made a world of difference at a pair of Northeast U.S. scrap yards.

In just two months of operation, Nick Marcezin says his new Bano Recycling Ripper Frank 2500 Series preshredder already has sparked increased production at his Depew, New York, scrap yard.

Marcezin is the second-generation owner of his family's business, Twin Village Recycling Inc., which has operated several facilities in the Buffalo, New York, area since 1946. The 15-acre Depew site houses the Ripper Frank, and the machine—a brand new model in Bano's product line—has helped reduce the burden on its shredder.

"We decided to put [the preshredder] in, and it's working beautifully," Marcezin says. "Actually, I was amazed at how good it works. It has met all my expectations and then some."

Twin Village receives a lot of bulky scrap, such as trailers, and Marcezin says the Ripper Frank handles that material with ease. "[Some material] used to get wrapped around our [shredder] grates and would plug them up," he says. "Now, we don't have that problem."

Additionally, the company uses the preshredder to process cars, washing machines, refrigerators, drums, propane tanks and more, and it has proven helpful with unshreddables as well as the prevention of thermal events.

"I'm sure it's going to help our wear parts, too, because it makes the shredder much faster," Marcezin says. "Actually, our shredder can't keep up with our preshredder. It's very good."

The Ripper Frank runs about eight hours per day, five days per week at Twin Village and was installed over the course of several days in October. Marcezin says Bano, based in Italy, has been a great partner since he chose the machine.

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"The company itself is pretty meticulous," he says. "They broke all their plans down for us. [The preshredder] has done everything they said it would do and then some. They did what they said. They were on time with the deliveries, and their technicians came out here and set everything up and trained us. We're pleased with everything."

The Ripper Frank is a new model named after Bano's first U.S. customer, Frank D'Angelo of Jersey City, New Jersey-based County Auto Wreckers LLC. D'Angelo purchased his first machine from Bano in 2011 and later helped the company improve the Ripper's design.

In turn, Bano named its newest version of the Ripper after him.

"I was shocked, actually," D'Angelo says of the honor. "I was excited and, hopefully, down the road when this one wears out, I'll get Frank No. 2."

D'Angelo, whose family-owned yard has occupied its 1.5-acre location since 1968, says his company lives by its preshredding operation given the yard's smaller size. "If we didn't have this, we'd have material falling out into the street," he says of the Ripper. "It keeps us up and keeps material flowing every day. We pull out all the nonferrous, and it processes the material for us. Without it we'd be in trouble. It brings us into the 21st century instead of the Stone Age."

The Ripper operates eight hours per day, five days per week at County Auto Wreckers and is fed material that includes motors, transmissions, semitrailers, light iron and some nonferrous. It processes around 700 tons per week.

D'Angelo looked at a preshredder he'd been renting in 2011 and, though he was happy with its performance, he noticed he would like to have something more customized to his working conditions and company setup. Already a Bano customer after purchasing a shredder in 2010, he reached out to the company and said he wanted a more customized version of his rented preshredder. "So, we worked together, and Bano came up with the Ripper machine," he says. "And that's how it started. So, this was kind of like [the rental] on steroids."

"Bano answered our call, and they came through with this. We've had it for about five years now. It works great."

The Ripper Frank 2500 Series is comprised of two-shaft shredders with asynchronous reversible rotors, suitable for processing light ferrous and nonferrous bales and preshredding end-of-life vehicles, construction and demolition, industrial and electronic scrap, according to Bano, which says the variable speed and torque rotors reverse their direction when necessary and interchange their function according to programmable and customizable work cycles.

When installed before a shredding line with a hammer mill, Bano says the Ripper Frank facilitates loading by producing a uniform and homogeneous feed, lowering wear and maintenance costs for the hammer mill, decreasing operating costs and increasing total capacity and value.

"Bano becomes like family to you," D'Angelo says. "I was [in Italy] years ago and toured their facility and was impressed with them. … You felt a connection with them. They came up with this machine, customized it to our needs and it's been working great ever since. They've been phenomenal with [customer service]."

Reality not matching POTENTIAL



For the second straight year, steelmakers' praise for the environmental friendliness of ferrous scrap has not been matched by increased value.

BY BRIAN TAYLOR

KEY TAKEAWAYS

+ Ferrous scrap prices have trended flat to downward since June.

+ Although steel output in the U.S. has been stable this year, several overseas markets have shown sharply reduced appetites.

+ A decarbonization premium did not materialize this year, though steelmakers continue to tout recycling's success.

If this year's ferrous market is a mirror image of last year's, scrap recyclers might not like the view.

One year ago, *Recycling Today* summarized the ferrous scrap market as one that "presented ferrous scrap shippers with very few highlights" but with encouragement in the form of increased attention to recycled-content steel production as a factor in bolstering low-carbon steel output.

CONTINUED ON PAGE 64

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CONTINUED FROM PAGE 38

The same observations can be made today but also pose a question: Why is everyone lavishing praise on ferrous scrap while its value remains so subdued?

STABLE ON THE HOME FRONT

As global pig iron production shrank amid trade barrier threats in early 2022 after Russia's invasion of Ukraine, ferrous scrap prices rose as its reliable availability created great demand. However, that momentum stalled in the second half of last year, with a slight rebound in scrap prices this spring marking one of the few enjoyable stretches for market players that benefit from higher pricing.

Using No. 2 shredded scrap tracked by the Raw Material Data Aggregation Service (RMDAS) of Pittsburgh-based MSA Inc. as a benchmark, between June and October of this year, it traded in a narrow range of $407 to $388 per ton.

As the United States considers how to reward its steel sector for a carbon emissions landscape that is well-below that of several other global steelmaking powers, steel company executives have been eager to tout their recycling credentials.

Steelmakers in the U.S. seem very willing to melt scrap, so culprits for a depressed ferrous market include an overall economy trending downward or consolidation within the steel or scrap sectors reducing its status as a true "market."

This year, the U.S. economy and its steel sector have looked much like 2022. The Washington-based American Iron and Steel Institute (AISI) reports year-to-date domestic steel output at about 77 million tons as of the week ending Nov. 11, down 0.6 percent from the nearly 77.45 million tons made during the same period last year.

Relatively flat domestic demand for ferrous scrap thus creates one barrier to increased pricing.

National steel sectors in other parts of the world with far greater declines in output also have been unhelpful for scrap processors—an acute factor for a global commodity the U.S. has in excess.

TROUBLE IN THE WIDER WORLD

Turkey is a leader in ferrous scrap imports, with its abundant EAF mills absorbing scrap from North America and Europe.

When Russia's invasion of Ukraine affected scrap demand in a way that bolstered prices in the U.S., a series of earthquakes that hit Turkey ran the risk of having the opposite effect, hurting a Turkish economy that already was beset by numerous fiscal difficulties.

Throughout the year, monthly steel production figures gathered by national trade associations and the Brussels-based World Steel Association revealed the difficulties Turkish steelmakers have faced.

After the first seven months of this

SEEKING NET ZERO

Nucor Corp. has announced net-zero greenhouse gas (GHG) targets for 2050 and has established a new interim target for 2030.

The Charlotte, North Carolina-based recycled-content steelmaker, which also owns the David J. Joseph (DJJ) network of scrap yards, says its GHG intensity targets are defined by the Global Steel Climate Council's (GSCC's) "Steel Climate Standard."

The GSCC, consisting largely of scrap-fed electric arc furnace (EAF) steelmakers, designed its standard to align with the Paris Climate Agreement's emission-reduction goals for the steel sector by 2050 and with the International Energy Agency's "Net Zero by 2050: A Roadmap for the Global Energy System" glidepath.

"We are the North American leader in sustainable steelmaking, and these targets further highlight our leadership role in developing clean solutions for the entire steel industry, as well as empowering our customers to meet their business and environmental goals successfully," Nucor President and CEO Leon Topalian says. "In recent years, we have made purposeful investments to increase the availability of carbon-free electricity and to support other emerging technologies that will help lead the way to a clean industrial future."

Nucor's net zero 2050 and interim 2030 targets include Scopes 1, 2 and 3 emissions from the production of hot-rolled steel as defined by the GSCC. This, according to Nucor, makes it the first diversified steelmaker in the U.S. to set GHG reduction targets encompassing all three scopes. The new targets are more ambitious than Nucor's previous target of a 35 percent reduction in steel mill Scope 1 and Scope 2 GHG intensity by 2030, using 2015 as a baseline, which was announced in 2021.

The company claims it already is one of the cleanest steel producers in the world, referring to a circular production process that uses an average of nearly 80 percent-recycled scrap and has one-third the GHG emissions intensity compared with the average traditional extractive steelmaking process using a blast furnace. "We believe that transparency in reporting emissions and routinely updating emissions reduction plans are each important to successfully address climate change," says Greg Murphy, executive vice president and general counsel at Nucor. "These targets and the details of our plans to achieve them will provide our customers, investors and policymakers with a clear road map of where Nucor is going and how we plan to get there."

As to how to meet those goals, the company points to increasing the use of clean electricity, carbon capture and sequestration and near-zero GHG iron making, saying it also will use technologies to reduce its consumption of injection and charge carbon and will reduce the use of natural gas in its production processes.

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year, Turkish producers had made 13.5 percent less steel year to date, or some 2.9 million metric tons. While not all the scrap to produce that "missing" steel would have come from the U.S., a double-digit percentage likely would have.

Remarkably, however, statistics from the U.S. Census Bureau aggregated by the U.S. Geological Survey show Turkey accepting 160,000 metric tons more scrap from U.S. shippers in the first half of this year compared with the first six months of 2022.

India has been a bright spot for U.S. exporters this year, boosting its purchases from 244,000 in the first half of last year to 537,000 metric tons in the first half of this year.

The bad news for U.S. exporters is the economic issues affecting other overseas scrap buyers. Several smaller nations coping with geopolitical turbulence have seen their steel sectors unable to compete for scrap on the global market.

Nations with considerably reduced U.S. scrap demand in the first half of the year include Mexico, down 350,000 metric tons (22.6 percent); Bangladesh, down 245,000 metric tons, (28 percent); Greece, down 165,000 metric tons (84.6 percent); Pakistan, down 127,000 metric tons (50 percent); South Korea, down 72,000 metric tons, (26.5 percent); and Egypt, which purchased 227,000 metric tons in the first half of last year but is within an "other" category this year with several other nations with a combined total of 153,000 metric tons.

Overall, the 7.12 million metric tons of ferrous scrap leaving the U.S. in the first half of this year represent a nearly 5.6 percent decrease in scrap outflows.

An argument could be made that the U.S. did not generate or process enough ferrous scrap in the first half of this year to serve its

FERROUS SCRAP PRICING*

OCT. 2023
$388

APRIL 2023
$498

OCT. 2022
$380

APRIL 2022
$604

*Mill buying price per ton for No. 2 shredded scrap, 0.17 or greater copper content; Source: MSA Inc.'s RMDAS service, http://rmdas.msa.com



foreign markets. Had scrap prices been higher, however, one also could speculate as to how much more scrap would have flowed into U.S. yards.

THOUGHTS INTO ACTION

Like last year, U.S. steelmakers and trade groups have advocated for low-carbon steelmaking and recycling.

What would it take to boost scrap prices and create a global market where the material can truly trade at a premium?

Globally, one answer appears to be fewer struggling economies. Steel producers in Europe and Turkey limped through 2022, while steelmakers in many countries continue to scrutinize what they consider to br excess capacity in China and other Asian countries on behalf of China-based producers.

Whether unilateral or in cooperation with the European Union and other trade partners, the concept of a border tax on high-emissions steel has yet to be truly tested.

A U.S. senator from Louisiana proposed the Foreign Pollution Fee Act of 2023, which could be one iteration. That proposal has received conditional support from steelmaking organizations in the U.S., which also have identified potential tweaks.

The U.S. and the EU continue to negotiate a joint effort potentially including a carbon border adjustment mechanism, but the U.S.-EU Global Arrangement on Sustainable Steel and Aluminum (GASSA) negotiations have not yet yielded a path forward.

Domestically, several steelmakers have introduced low-carbon, recycled-content branded steel, announcing purchases by automakers and other manufacturers. However, this year seems to have passed without the decarbonization-based boost in scrap prices that remains an enticing possibility for those seeking wider margins in ferrous scrap processing and trading. RT

The author is senior editor with the Recycling Today Media Group and can be reached at btaylor@gie.net.

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Who's afraid of the BIG, BAD WOLF?

Industry veterans discuss steelmakers' vertical integration into scrap processing and how independent processors can find success amid a shifting landscape.

BY CHRIS VOLOSCHUK

Addressing a panel of scrap industry heavyweights at the Recycling Today Media Group's Scrap Expo in Louisville, Kentucky, in September, Sierra International Machinery President John Sacco asked how companies large and small can compete against the arriving "big, bad wolf"—steel mills that own and operate metal recycling facilities.

Vertical integration has been steadily gaining momentum among steel companies. A list of the 20 largest North American ferrous scrap processors and shippers published by *Recycling Today* in March 2022 shows six of the top 12 spots are held by steel producers with the ability to keep tons in their own networks.

Examples of consolidation abound. In March, Texas-based Commercial Metals Co., now going by CMC, acquired two scrap facilities in Tennessee from Roane Metals Group. In other notable moves within the last two decades, OmniSource became part of Fort Wayne, Indiana-based Steel Dynamics Inc.; Cincinnati-based David J. Joseph and Missouri-based Galamba Group were acquired by Charlotte, North Carolina-based Nucor; Ohio-based steelmaker and mining firm Cleveland-Cliffs Inc. acquired Ferrous Processing & Trading, headquartered in Detroit; and Australia-based steelmaker BlueScope purchased Waterloo, Indiana-based MetalX's ferrous business as well as Milliron Recycling of Mansfield, Ohio.

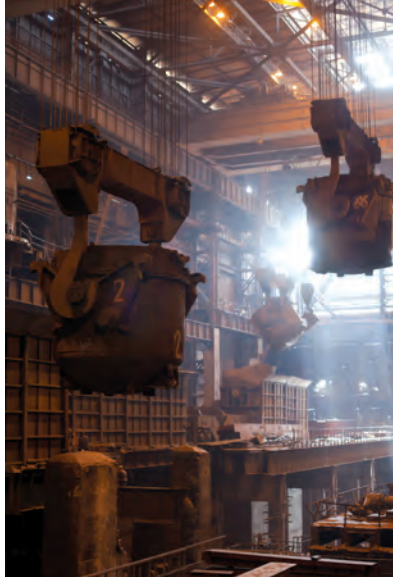
When it comes to competing against vertically integrated steel mills for scrap, Jay Robinovitz, president and CEO of



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From left: Kevin Gershowitz, George Adams, Danny Rifkin, John Sacco and Jay Robinovitz discussed the vertical integration of steelmakers at Scrap Expo.



St. Louis-based Alter Trading, which operates a network of more than 65 scrap yards, said, "Bring it on."

WHAT, ME WORRY?

Robinovitz reiterated that the ability for independent scrap yards to compete with those owned by steel mills comes down to having solid relationships with the mills.

"I guess when I think about this topic, everybody's worried; everybody's talking about these steel mills that are buying up scrap companies," he said. "You know, I don't care. We're here to compete, and I don't care if you're a steel mill or a scrap yard. I think there are scrap companies in every town, every city, every state you go into. You can't buy them all up, you can't put them all together. There's always going to be a competitor.

"[Ferrous scrap is] a commodity. There's a price it can be traded at, and a price that makes sense that you can buy it off the street anywhere. … I'm not really afraid. … I welcome competition because it's just part of the world we're in."

George Adams, CEO of SA Recycling in Orange, California, which operates 130 scrap yards, agreed there always will be competition for scrap.

"If there was only one steel mill out there, then maybe it makes a difference," he said. "But there's a lot of steel mills, and a lot more steel mills being built. I feel that steel mills have been owning scrap yards for a long time. I think they're going to continue to do that, and I think they're going to continue to buy more. It's a fact."

Adams noted as more steel mills are built, around 12 million tons of new capacity are expected to come online in the short term, with more coming afterward.

"I think there's plenty of room to do business, and I don't care who you are," he said. "I don't care if you have 100-plus yards like I do, you can never beat a determined entrepreneur. A small, owner-operator entrepreneur will kick your butt every single time. It's just a fact. They're focused, they're there every day, they're living it. I think there's always a place for all those guys.

"As long as there's enough steel mills to compete so that even if one steel mill wants to overpay for its shred, there's still another steel mill that is losing that material and wants it from you. As long as we have a lot of steel mills, we're good to go."

Danny Rifkin, president and CEO of Fort Wayne-based MetalX LLC, witnessed steel industry vertical integration firsthand. The Rifkin family founded Fort Wayne-based OmniSource, which Steel Dynamics Inc. acquired in 2007. Along with his father and brothers, Rifkin grew OmniSource to an organization with 4,000 people handling 6 million tons of ferrous scrap annually until his departure in 2008. Under his leadership, the company completed 25 scrap acquisitions.

He said independent scrap businesses can compete with steelmakers operating scrap divisions.

"No one can best a sharp entrepreneur," Rifkin said. "I think the industry is stratifying, and, as we saw with what happened in the Midwest in that last wave of consolidation, the mill mentality, or the focus of what the mills are trying to accomplish, is very different than what drives an entrepreneurial scrap company. There's a place for that, and I think the future bodes well for the small to medium players who will have that opportunity. There will be a scrap business and there will be consumption."



CUSTOMER CARE

The panel of Robinovitz, Adams, Rifkin and Kevin Gershowitz, vice president of Gershow Recycling in Long Island, New York, agreed that successfully competing in the changing ferrous scrap landscape comes down to strong customer service and relationships with buyers, regardless of a scrap yard's size.

"I'm a kid from a small scrap yard in Massachusetts, and every little yard matters," Robinovitz said. "You can compete, and there is a role and a position for every single recycler in this country. I'm telling you, no matter who you are, if you take care of your customers, whether they're coming into that yard or you're picking it up and servicing somebody, you can sell [scrap] and you can make a profit. I think that's part of the inherent nature [of the industry]. … There are so many different ways [to make a difference]. You don't have to have a shear. You don't have to have a shredder. The most important guy in my life was always that peddler that came in every day, rain, cold, snow, shine, and he's trying to feed his family, and I think that is why that's always going to be a part of our industry. I don't think they'll have to worry."

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Gershowitz said if a scrap yard is shut out from a mill, it's likely related to the lack of a sound relationship, a material quality issue or a high asking price rather than vertical integration's effects.

To Gershowitz's point, Adams said, "If you do something wrong at a local steel mill, not having that relationship, they're going to cut you off. But there's always another steel mill facility that's farther away. Or you modify your business where you're doing more nonferrous instead of ferrous. We're really talking about steel mills right now, but there's more to our business than steel. … So, maybe you're not handling as much steel and you're handling more nonferrous … or you're selling new steel. I just feel like there's a million ways to modify. I think you can always compete."

SETTING THE PRICE

In Sacco's estimation, steel mills with scrap operations keep their scrap pricing down because they want their mill sector to show profitability versus their yards. He asked the panel if they believed that to be true or if the market truly was free.

Gershowitz said he does not believe vertically integrated steelmakers are trying to lower their scrap buying prices to affect their mills' margins because the chief goal of scrap processors and consumers is "to buy scrap cheap."

"To some degree, we can't really dictate the price we sell it for," he said. "From my perspective, it's a lot easier to dictate your buy price than it is to dictate your sell price. … Our goal is to win the scrap."

Adams added that the market sets the price of scrap and will continue to do so.

To Rifkin, the issue is less the market and more the transfer prices between the mills and their captive scrap companies. "That's where you see all kinds of disruption and all kinds of chaos," he continued, "because it's fine for a consolidated company that's a steel company with a scrap arm to report earnings or profits however they want. But, if you want to address the underlying issues internally, you can find that the scrap operations become demotivated or disincentivized and have trouble competing. That's the flip side."

"You see some people trucking scrap farther than you could ever imagine," Robinovitz added. "Well, you can say, 'It doesn't matter how expensive it is, it's our shredder.' It matters what the commodity is valued at when it hits the ground. If you want to be competitive in the steel business, I think you have to be competitive in how you produce it," he continued. "You should be matching our markets, what we're living with, because that's the true nature of a competitive mill." **RT**

The author is associate editor of *Recycling Today* and can be reached at cvoloschuk@gie.net.

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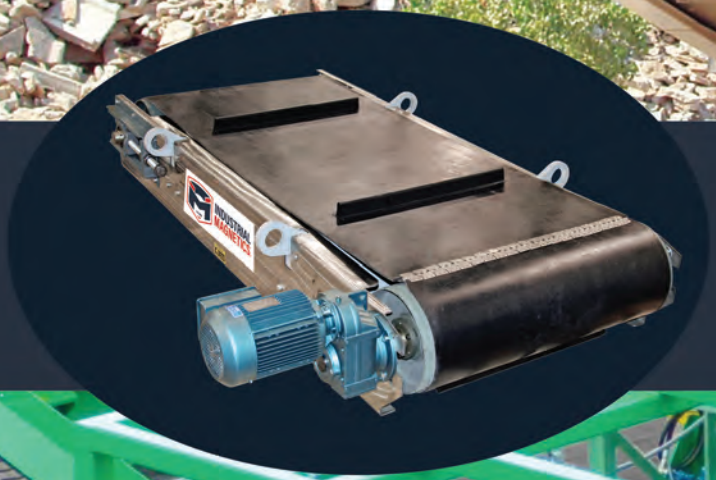
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HANDLING AIR WITH CARE

Air compressors are gaining importance as MRFs increasingly use optical sorters. Their placement and incoming air quality can affect their operation.

BY CHRIS VOLOSCHUK

Bob Safford, senior key account manager at Kaeser Compressors USA in Fredericksburg, Virginia, calls an air compressor "the third child" of a material recovery facility (MRF).

"[Air compressors] seem to be forgotten about," he said during the Compressor Management session at the MRF Operations Forum in Chicago in October. "I'm qualified to speak on this because I am the third child and I have three children. The rules get relaxed, the budget gets blown on the first two and, when it comes time to pay the piper, that's sort of what happens with the compressors."

In 15 years of working in business development and original equipment manufacturer (OEM) integration, service, sales and management in the air compressors space, Safford said he has seen the effects of poor placement and maintenance on this vital equipment.

"[Facility owners] being blown away at the end of the construction process by

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the price of compressors and where to put them is something we commonly see," he said. "I don't think anybody is running any facility without an air compressor, and it's going to get more and more prevalent."

Panel moderator Ryan Lawlor, project engineer at Melville, New York-based RRT Design & Construction, noted that now, more than ever, compressed air is critical to any MRF operation as it is required for robotic and optical sorters to function. "In our experience with MRFs, we've seen a lot of different integration methods and the value of air has changed," he said.

Safford added that the biggest issue facing facility operators is planning and budgeting not just for an air compressor but for an entire air compression system.



Bob Safford speaks during the MRF Operations Forum in Chicago.

SETTING UP THE SYSTEM

When considering an air compression system, Safford said placement should be the No. 1 priority.

"It should be placed in a clean environment for intake air," he said. "You're basically taking air, putting it into a compression chamber and that's what's feeding all your equipment that's for automation, your optics and all that. I've been to your facilities, and your air is not clean there, so you've got to place [the air intake system] outside."

While air intake is important for a healthy compressor, so is exhaust air. Safford noted the compression process creates heat, and excess heat is "the No. 1 thing that will kill an air compressor."

Along with air quality, placement can help simplify maintenance. He cited examples of what not to do, such as installing a compressor underneath a conveyor.

When setting up a compressor system, Safford said the receiver must sit on a permanent and level concrete slab.

"As simple as it seems to have an air tank or receiver, if you get it too far away from the dryer, there's going to be moisture issues," he said. "There's also going to be point-of-use, where you're using high-impact demands, and there still needs to be some sort of receiver for those demands."

He added that operators should work compressor redundancy into site design.

Power also is a concern when installing a compressor system, and Safford suggested planning for power needs when building or upgrading a facility, especially given the long lead times for components.

Air quality and proper filtration matter. "The optics need clean air, the valves need to be lubricated and, as soon as you start introducing moisture into those valves, it's washing them out and there's premature failures," Safford said. "Systems are demanding more and more quality air, and there's a lot of sizing and engineering work that goes in to do that and make sure it's going to be proper."

Condensate water is another factor to consider. Safford said a recent project he was working on was halted for months because of permitting issues related to water runoff.

"During the heat of compression, there's a lot of moisture that's made and that has to be drained," he said. "It can be as much as 300 to 600 gallons a day on a 300-horsepower machine. … I highly encourage you to speak with a professional or someone that knows what's going on within the compressor system, so when it comes time for the build and the permits, everybody's thought of everything and has it together. If it's something as simple as a drain line you didn't think of, that could hold up a project.

"That condensate water that comes out of a compressor also is categorized as hazardous waste because, in the compression process, there is oil in that," Safford continued, adding that if the Environmental Protection Agency finds out the system is improperly drained, a major violation with fines will be the result. "There are scrubbers for that, and things that need to be put in place when you have that much condensate coming out."



DANGERS IN OVERSIZING

Pipes in a compression system shouldn't be overlooked in the MRF design process.

Piping needs to be sized correctly for the compression system to remain consistent as oversizing can lead to trouble.

"You need storage," Safford said. "Where are you putting the storage in the design loop for the consistency of pressure throughout the whole system? … A lot of people throw horsepower at it. They say, 'Well, we don't really know what the plant's going to use,' and then they oversize. Oversizing is probably one of the worst things you can do for a compressor. It never allows the oil to get up to temperature to burn off the condensate that's being created in the compression chamber."

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WHY COMPRESSORS FAIL

Safford said the main reason air compressors fail is because of heat.

"That's the killer," he said. "It's because the oil gets overheated and there's not proper lubrication of the system."

Other factors that contribute to compressor failures are the dirty environment of a MRF, oversizing of the system and the lack of proper maintenance.

"Air gets taken … into the compression chamber, then it goes out through a cooling process for the discharge air, but also, the oil that's going back into the compression chamber is cooled. So, what we see a lot of in these [MRF] environments where you have to have this equipment is all that dust, the particles, everything, gets sucked into the after-cooler, and it gets blocked," Safford said. "You probably get high-temp alerts, and you're shutting down. The reason it needs to be cooled is it's using the oil."

Safford compared an air compressor to a car and its usage to vehicle mileage.

"This is just 12 hours a day, going 60 miles per hour, and we typically like to run our compressors at 70 to 80 percent for optimal use," he said. "To give an idea of what that would be in miles per year, that's 202,000 miles on a five-day, 12-hour shift. That's a million [miles] over five years, and we've seen compressors that haven't been touched in five years. So, the maintenance is pivotal. But, if you're not going to maintain it properly, then at least have it in the right environment."

Dirty air is a primary contributor to the excessive heat that can shut down a compression system. Safford said if dirty air is constantly entering the compression chamber, the oil and aftercooler will be negatively affected.

"An air compressor is probably the most expensive thing that you can run in your facility for the energy that it uses," he said. "A cure for failure is simple—just a properly designed system and routine maintenance. The cure for a shutdown is redundancy."

He added that the biggest keys to success with a compression system are to design for it and maintain it and reiterated the importance of consulting with experts when questions arise.

"There's probably more that goes into designing an air compressor system than you'd probably ever think," Safford said. "That's why using a professional to help you out is a good idea. We've seen what works in your facilities and what hasn't worked as well." **RT**

The author is associate editor of *Recycling Today* and can be reached at cvoloschuk@gie.net.





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NAVIGATING through complicated times



Policy proposals from Brussels and other world capitals could make trading recyclables increasingly complex for Europeans.

BY BRIAN TAYLOR

Recyclers around the world, particularly in Europe, find themselves surrounded by sustainability-linked opportunities on one side and threats tied to the misconception that they deal in "waste" on the other.

Research into the energy-, resource- and emissions-savings benefits of recycling paints a clearer picture that both the environment and regional economies benefit when discarded materials are reprocessed into something new.

But for some environmental advocates, that picture is less clear when it comes to plastic. Some of those same recycling skeptics also oppose recycling loops with longer supply chains.

In Brussels and within the United Nations, skeptics seem poised to score several victories that have been met with counter-skepticism by those who invest in recycling.

SPECIFICS AND GENERALITIES

The last several years have seen groups like the Bureau of International Recycling (BIR) and European Recycling Industries' Confederation (EuRIC), both based in Brussels, fending off unwelcome policies while defending recycling's reputation.

At the most recent BIR convention in October in the United Arab Emirates, the organization's Trade and Environment Director Alev Somer sounded the alarm on the sector's need to have a bigger say when extended producer responsibility (EPR) systems are formulated.

EPR systems are intended to ensure manufacturers and brand owners pay part of the tab when hard-to-recycle items reach end of life. EPR often has been proposed for electronics but increasingly is being applied to packaging.

For cardboard or used beverage can recyclers, these systems seem wildly unnecessary considering they already invest heavily in collection.

But when recyclers are not at the table, Somer said established secondary commodities can be labeled "waste," a dispiriting misnomer to many in the metals and containerboard supply chains.

Somer told BIR attendees there were about 30 such EPR systems globally in the early 1990s, but that figure has grown to about 400 today. She said EPR was now on the agenda at the UN, the EU and the Organization for Economic Cooperation and Development (OECD).

"This is happening with or without

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us," Somer said. "One of the main concerns is that recyclers are not sitting at the [global] table when they are discussing EPR. We are absent; we are invisible."

Unfortunately for recycling organizations around the world, defending the reputation of recycling has become a job for full-time staff members.

The BIR published reports on the environmental benefits of recycling in 2008 and 2016 with an emphasis on metals. In a report to be authored this year and next, the scope will be broadened to include all commodities BIR represents and will address additional aspects.

"We want to go beyond CO_2 emissions and energy savings from recycling," Somer said. "We are looking at other natural resource savings at a wider level, so we might include water consumption or transport emissions and have some comparisons between secondary and primary production."

The intention was to give the BIR and its members more data to be in a stronger position when talking at a global level with the UN, EU or OECD. The report is expected to be issued at the BIR convention in Singapore next October.

In addition to EPR policies, European recyclers have been waging a policy battle to keep Europe's ports open to international scrap trade.

A WIDER LOOP IS STILL A LOOP

Another complication for Europe-based recyclers is maintaining the ability to bring collected materials to the most eager market.

As reported by *Recycling Today* earlier this year, part of that concern is over a system requiring non-OECD countries to grant permission for scrap shipments sent from EU member countries.

The registration system alone can present barriers to companies that carry out recycling in Europe, but it is far from the only one in the regulatory pipeline.

Another proposed regulation involves reprocessed polyethylene terephthalate (PET) bottles.

Plastic packaging floating in bodies of water around the world is a touchstone in its demonization. Improperly discarded plastic packaging has helped lead to calls for more EPR systems, for substituting plastic with other materials and for reusable packaging.

In the meantime, however, PET bottle recycling has become more

widespread in the past 10 years. Pledges to use more recycled PET (rPET) by brand owners in Europe have caused them to seek a "right of first refusal" system to prevent rPET from going into other applications, such as fabric production.

EuRIC, the European Waste Management Association (FEAD) and Plastics Recyclers Europe (PRE) say an established market for rPET will continue to direct it to those who require it, whether they make bottles, tote bags or T-shirts. They also claim there is no shortage of rPET on the continent.

"Supposedly, this scarcity is a result of nonbeverage industries, in particular the fiber market, using a significant share of food-contact recycled PET," the organizations say. "However, since the introduction of the mandatory recycled content target for PET beverage bottles in the [EU] Single Use Plastics Directive, the share of the fiber market has dropped sharply."

As a sign of plastic recycling's growth, the organizations say the installed capacity for production of food-grade rPET in the EU last year stood at 1.4 million tons. They estimate the beverage industry in the EU would require 800,000 metric tons to meet the 25 percent mandatory recycled content target in 2025 and about 1 million tons in 2030.

As of late October, the groups say the problem in Europe was not too little rPET but perhaps too much. "The European rPET market is facing a surplus status, with very low demand from the beverage industry, consequently forcing European recycling plants to run well below their capacities," they say.

HEADACHES BEYOND PLASTIC

In the metals sector, one source of regulatory concern focuses on critical and strategic raw materials lists in the EU that could include scrap materials.

In September, EuRIC and the BIR again had to issue a statement of concern, this time about the suggested inclusion of ferrous scrap on a proposed EU strategic raw materials list. The proposal emanated from a European Parliament committee.

"The recent last-minute endorsement for the formation of a secondary list of strategic raw materials, with ferrous scrap quoted as [an] example, raises several questions," EuRIC says.

The organization continues, "Not only could this be seen as outside the scope of the commission's proposal, but the inclusion of ferrous scrap without sufficient data sets an alarming precedent for the unrestricted addition of materials to the list, lacking clear conditions or a methodology for assessment."

For recycling organizations in Europe and their member companies, this recent proposal regarding strategic raw materials appears as another example of creating barriers to profitability when they instead could be investing to help produce low-carbon recycled-content materials the world needs and is demanding.

"Creating a list of secondary strategic raw materials, which will include ferrous scrap, raises concerns, and detracts from the proposal's purpose," according to EuRIC. "Let's prioritize sustainability and climate neutrality in steel production by increasing recycled content." RT

The author is senior editor with the Recycling Today Media Group and can be reached at btaylor@gie.net.



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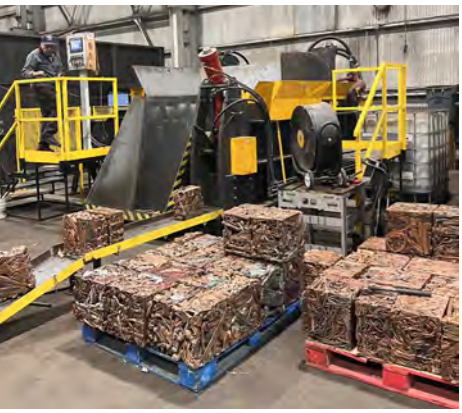
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IMABE was founded in 1975 in Spain by the Benitez family, which provides solutions for the recycling and scrap industries, as well as agricultural baling.

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IMABE offers a wide range of products that many American customers have long trusted: automatic horizontal balers, shears, two-ram balers and conveyors. Some of the latest installations can be found in the U.S., such as at J. Solotoken & Co. Inc. in Indiana. There, a three-ram CH-1500 baler for metal scrap was installed. At Duffy in Taneytown, MD, a 240/3000 model extrusion baler has been installed.

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The company provides excellent customer support, offering technical assistance and original OEM parts promptly. W2S prioritizes customer needs and industry standards, ensuring excellence by supplying top-quality equipment. The legacy of the Wildes family's business, founded by industry leaders and offering innovative designs, will continue through this alliance.

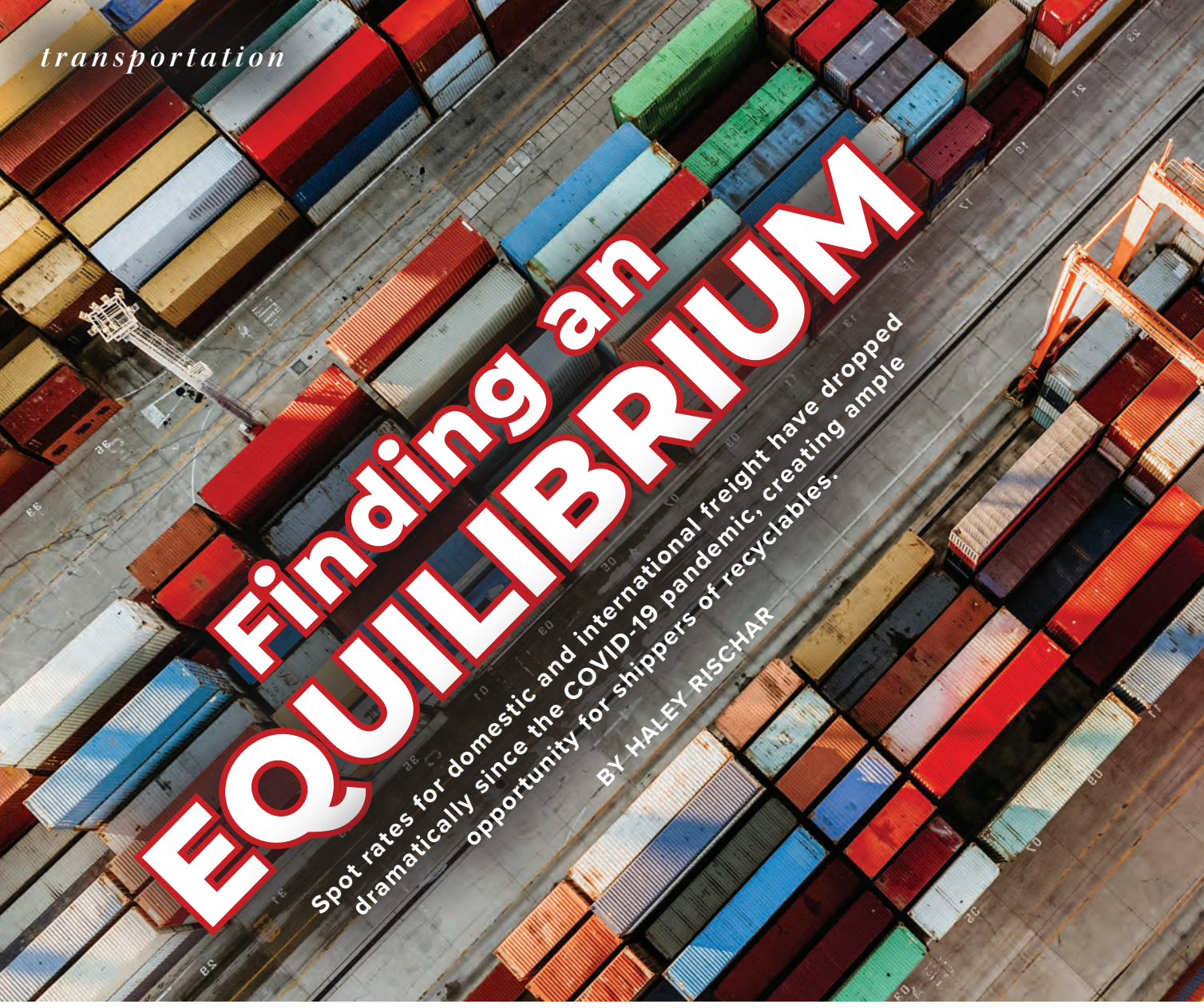
KEYS TO THE ALLIANCE

The business partnership between IMABE and Waste2Solutions is a powerful example of synergy in the recycling industry. By combining IMABE's technical expertise with Waste2Solutions' forward-looking vision, the alliance is geared to provide significant advantages for customers.

Thanks to this partnership, IMABE enhances its coverage in the U.S., providing better service to its clients, as well as expanding its sales, parts and customer service. This alliance is focused on ensuring the most important thing: putting the customer at the center and being able to offer them the best services.

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Finding an EQUILIBRIUM

Spot rates for domestic and international freight have dropped dramatically since the COVID-19 pandemic, creating ample opportunity for shippers of recyclables.

BY HALEY RISCHAR

As the transportation industry recovers from inflated demand brought on by the COVID-19 pandemic, excess capacity has created an ideal market for recyclers looking to ship commodities domestically and abroad.

During the session From A to B: The Outlook for Transportation at the Paper & Plastics Recycling Conference in October, John Paul Hampstead, strategic analyst for freight market forecasting and analytics platform FreightWaves, noted shippers have significant pricing power in the current market. This is particularly true for recyclers relying on backhaul lanes, which ship in the reverse direction of most freight and population centers and often are cheaper than traditional lanes.

"Capacity is very loose," he said. "The trucking industry adapted [to increased demand during the pandemic] by bringing on tons of new capacity; tons of owner-operators and small fleets, especially, added trucks to chase these rates. When demand receded, the capacity was leftover, and rates crashed."

According to data from Chattanooga, Tennessee-based FreightWaves, spot rates peaked during the holiday season in 2021, steadily declined throughout 2022 and bottomed out this year.

Although the rate at which carriers entered the market was negative last summer, Hampstead said overall capacity in the trucking market continued to grow, creating "soft conditions … until more capacity bleeds out of the market."

The market for ocean containers is similar, with short-term rates currently below prepandemic levels. Backhaul trans-Pacific lanes offer rates Hampstead described as "dirt cheap" for loads traveling from North America to Asia.

"What we've seen over the summer is that even as ocean carriers have tried to adapt to this market by switching out larger vessels for smaller vessels on their lanes, by doing blank sailings, by rejecting freight, trying to put artificial limits on the amount of capacity available, they haven't been able to shore up prices," he said.

This is a stark contrast from late 2021's congested ports and inflated prices.

Anupa Pradhan, a panelist and vice president of Plano, Texas-based logistics firm Sealink International Inc., described freight markets as "a swinging pendulum," highlighting difficulties in coordinating supply and demand.

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"Throughout 2020 and 2021, … there was a lot of demand; the ports were congested; there were off-and-on closures everywhere, especially ports in China" she said. "A functioning supply chain had become a chaotic world for us. Things started coming down again [last year], but then they went in the other direction, so there was this imbalance again."

CHANGING TRENDS

Data FreightWaves analyzed show a gradual deterioration in total U.S. exports and capacity assigned to U.S. export lanes since 2022, allowing those shipping recyclables to seek aggressive prices.

"If you find large spreads between your contract rates and your long-term rates and your short-term SPA [special price agreement] rates, you should have a conversation with your carriers," Hampstead advised those in attendance.

Tyler Brown, business development leader for the transportation and logistics divisions of De Pere, Wisconsin-based AmeriLux, said securing contract rates has been key to keeping up with fluctuating trucking markets.

Using its network of full truckload and less-than-truckload carriers, AmeriLux aims to find a "win-win with [the] customer [where] you find a price you agree to whether the market is way up or way down," he said.

The pandemic also affected carrier preferences among shippers, with many choosing drop trailers rather than live loads because of their flexibility.

From difficult-to-unload cargo to staffing issues at warehouses, working within truck drivers' schedules can be a challenge, Hampstead explained. The ability to load and unload shipments without hurry led many national carriers, such as J.B. Hunt, Schneider, Werner and Ruan, to buy thousands of trailers, subsequently driving up asset prices, he added.

That trend could shift back toward a preference for long-term arrangements with carriers based on certain pricing criteria, such as turns per week, distance or time needed at each location, he said.

FUTURE VOLATILITY

Looking ahead to next year, panelists agreed the power will remain in the hands of shippers—primarily exporters.

"Even though they were able to, in many cases, secure reductions in contract rates by 30 percent or 40 percent year over year from 2022 to 2023, what I've been told is that in the current RFP [request for proposal] bid season, many shippers are still asking for rates to come down," Hampstead said.

While spot prices have waned, Brown emphasized that locking in long-term contracts can yield better rates.





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From left: John Paul Hampstead of FreightWaves, Anupa Pradhan of Sealink International and Tyler Brown of AmeriLux

"Make sure if you're working with carriers and you do have anything consistent in your network that you're not chasing the bottom price; a little above that and you can create a win-win scenario that is going to last because we all know that what goes down eventually will come up," he said.

Hampstead noted that if shippers rely on the lowest rates, it can introduce risk into their networks. "If we're truly at the bottom and we know rates will go up, it's only a matter of time before your routing guide starts getting blown up," he said.

While domestic transportation has carried most of U.S. demand, Pradhan said export markets remain strong.

Hampstead added that it's a great time for shippers to promote technology adoption in their carrier networks.

"They can raise the level of expectations to do more business with them … whether that means some sort of direct data connection via API [application programming interface], whether it means visibility or other kind of service level agreements," he explained. "If you want to make your carriers onboard into certain platforms, you may have the leverage to do that in this market."

Future volatility isn't completely out the window, though, and Hampstead foresees complications spawning from rapid consolidation in the industry.

"Even now, shippers are probably trying to simplify their networks, which means firing their worst carriers," he said. "I think what they should be doing is diversifying and preparing for volatility we know is coming [but] is not here yet." RT

The author is associate editor of *Waste Today*, a sister publication to *Recycling Today*. Contact her at hrischar@gie.net.

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RRS expands ownership team

The board of directors for Resource Recycling Systems (RRS), Ann Arbor, Michigan, has added five leaders to the company's ownership team: Elizabeth Hughes Bowden, Hunt Briggs, Beth Coddington, Brennan Madden and Matt Todd.

RRS says these new shareholders collectively have served its clients for more than 65 years, demonstrating dedication to its mission and positive impact on clients and the industry at large.

Elizabeth Hughes Bowden is based in Lima, Ohio, and has been with RRS since 2008. She serves as team resources director and plays a crucial role in the company's rapid growth by implementing systems, recruiting talent and fostering inclusivity, according to RRS.

Hunt Briggs, located in St. Louis, has been with RRS since 2012, bringing expertise in ecology and industrial ecology, finance and strategy to support clients in sustainable packaging, circular economy transition and more. He leads RRS' organics recovery activities.

Beth Coddington has been with RRS since 2006 and is based in Boulder, Colorado. RRS says she is skilled at economic analysis and has been instrumental in statistical modeling, budget projections and enhancing residential recycling access.

Brennan Madden is a materials management expert and is based in Berkeley, California. He joined RRS in 2011 and has been a key figure in expanding RRS' TruCycle assessment methodologies and developing databases crucial to RRS' materials recovery consulting.

Matt Todd, who works out of Durham, North Carolina, has been with the company since 2012, specializing in solid waste and recycling programs, end markets and the circular economy. On behalf of RRS and its clients, Todd has led the development of numerous community recycling partnerships.



Elizabeth Hughes Bowden



Hunt Briggs



Beth Coddington



Brennan Madden



Matt Todd



Lane MacAllister

Leadpoint names VP of safety and compliance

Leadpoint, a Phoenix-based labor solutions provider for the recycling industry, has announced **Lane MacAllister** will be its vice president of safety and compliance.

With more than 20 years of experience in the industry, Leadpoint says MacAllister will be a valuable addition to the team.

In his previous role as director of safety and compliance at Niles, Illinois-based Reyes Coca-Cola Bottling, MacAllister managed environment, health, safety and sustainability professionals and implemented comprehensive safety protocols.

"With Lane's extensive experience in safety management and his proven track record of implementing effective safety protocols, we are confident that he will play a pivotal role in maintaining and enhancing our commitment to a safe work environment," Leadpoint Chief Operating Officer Len Christopher says. "Lane's expertise will undoubtedly strengthen our team as we continue to prioritize the wellbeing of our employees and the integrity of our operations."

MacAllister held diverse roles at Phoenix-based Republic Services for more than a decade. His most recent position as director of operations support involved the development and dissemination of standardized corporate processes and initiatives across the organization.

MacAllister holds a bachelor's degree in liberal studies from Chapman University. He will be based at Leadpoint's corporate headquarters in Phoenix.

Photos courtesy of RRS and Leadpoint

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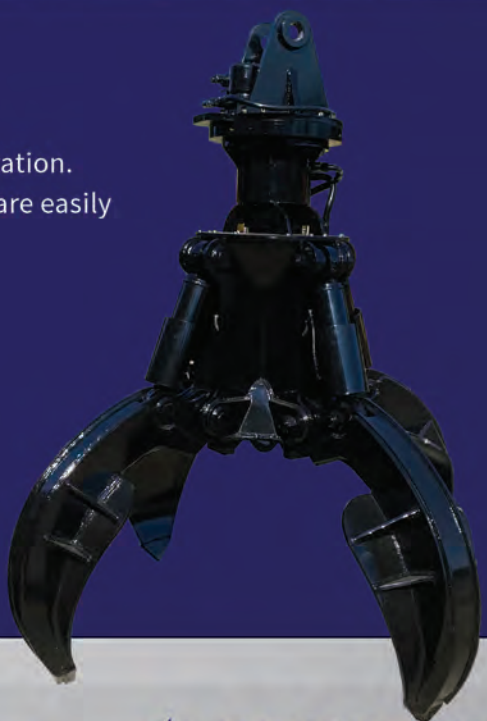


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AMCS launches the AMCS Platform Winter 2023

AMCS, an Ireland-based technology provider to the waste, recycling and environmental health and safety industries, has launched its AMCS Platform Winter 2023.

"This release demonstrates our continued commitment to empowering our customers to increase productivity and efficiency while also improving environmental outcomes," says Elaine Treacy, global product director at AMCS. "Our customer-led advancements leverage powerful emerging technologies, such as AI [artificial intelligence] and IoT [internet of things]. Our goal is to streamline and automate processes to ensure our customers reach the highest levels of sustainability and business performance."

According to the company, the Winter 2023 platform is set to offer new benefits and features across transport, finance, material management and data analytics operations.

Additionally, AMCS says new master route management and transport validation features will enhance automation, control and insights, while its Smart Inspection Tool will digitize inspections and trigger automatic work orders. The winter release includes a telematic connector to enable preventive maintenance as well as a CO_2 calculator designed to facilitate carbon emission measurements.

The platform also includes an enhanced version of the company's Vision AI technology.

"AMCS Vision AI will improve the quality of recyclables collected, allowing us to work with our end clients to educate and advise them on improving the material they are presenting and



avoiding contaminants," says Andrew Pellegrini, vice president and general manager of Stanford, California-based Peninsula Sanitary Service Inc., an AMCS customer.

The platform also includes an expanded price hierarchy to simplify and automate pricing, reduced scale ticket entry time to act as a point of sale with new payment options and the AMCS OData Connector, which provides access to all AMCS platform data.



Ardagh Metal Packaging, Crown Holdings fund equipment grants

Beverage can manufacturers Ardagh Metal Packaging (AMP), Luxembourg, and Crown Holdings Inc., based in Yardley, Pennsylvania, have funded a pair of can capture equipment grants.

The companies say the funding will help capture approximately $325,000 of additional cans, which, when recycled, could result in energy savings equivalent to powering more than 900 U.S. homes per year.

GreenWaste, based in San Jose, California, and RecyclingWorks, based in Elkhart, Indiana, are the two material recovery facilities (MRFs) receiving the grants.

"Ardagh Metal Packaging is proud to jointly fund, with Crown, these grants that continue to demonstrate there is a significant opportunity for MRFs to capture millions of aluminum beverage cans each year," AMP North America CEO Jens Irion says.

GreenWaste, which serves 300,000 households in the San Jose area, will use the grant toward a second eddy current separator that will capture undersized aluminum and previously lost items from the MRF's screening process. It expects to capture 260 new tons of aluminum each year with this equipment.

RecyclingWorks reaches more than 200,000 households and will use the grant toward a robotic sorter that can be installed on the residue conveyor. It says the equipment will reduce the amount of aluminum going to landfill by 45 tons.

"A consumer putting an aluminum beverage can in the recycling bin, getting hauled to a MRF and then being missorted and not recycled is unacceptable," says John Rost, vice president of global sustainability and regulatory affairs at Crown. "We need more of our aluminum back to provide a consistent domestic supply of material that people in good manufacturing jobs at our facilities ultimately turn into new aluminum beverage cans."

The grants are in addition to four others AMP and Crown previously funded as part of a program in collaboration with The Recycling Partnership, Washington. The companies say the six equipment grants have catalyzed the installation of equipment that will capture more than 115.5 million aluminum beverage cans each year.

"These improvements to our recycling systems will provide meaningful gains in aluminum circularity," says Adam Gendell, director of materials advancement at The Recycling Partnership. "We see tremendous opportunities to continue upgrading our recycling infrastructure and we're grateful to partner with the Can Manufacturers Institute to pursue our shared mission of reducing waste and increasing circularity."

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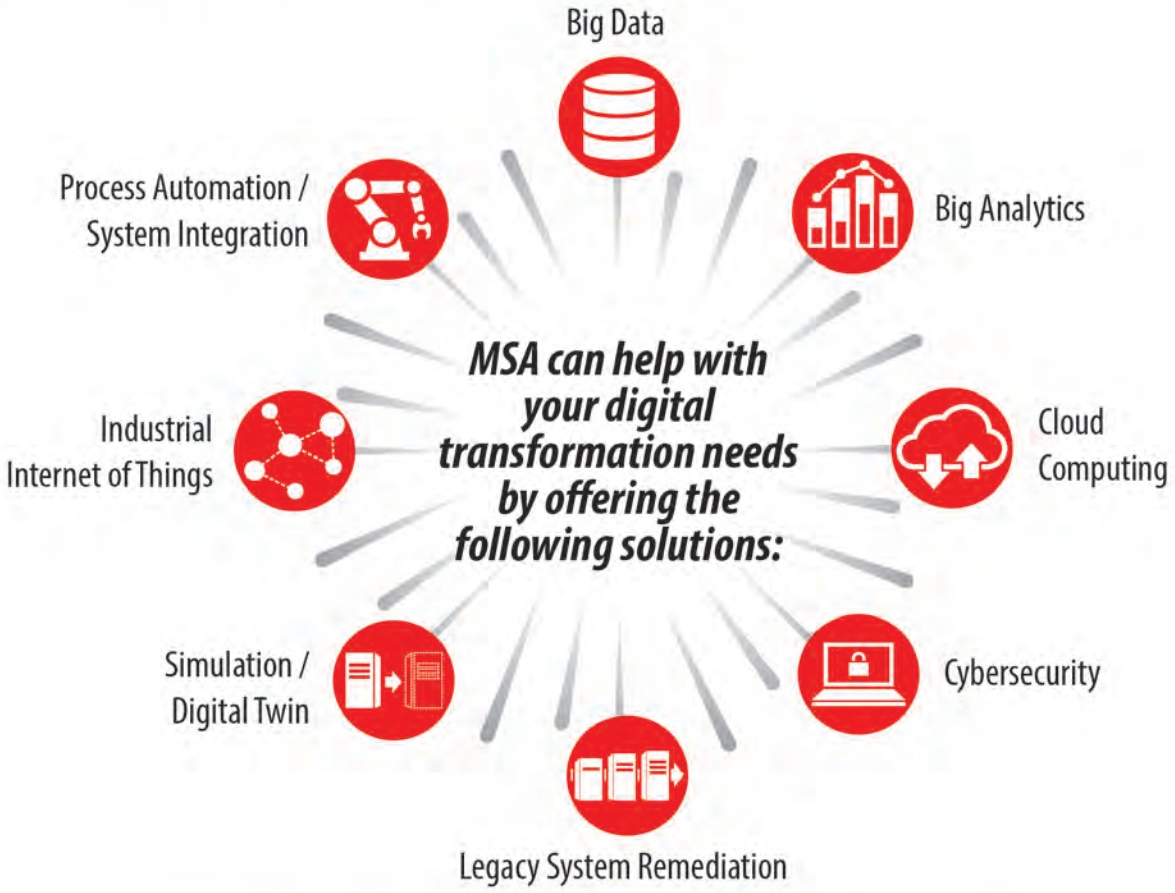
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SWEED SS6K100 REDA SLITTER SYSTEM. Gold Hill, Oregon-based Sweed has released its SS6K100 Reda cable slitter system, designed to help recycle steel-armored power cables. The system, which is operated by two people, is capable of:



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- maintaining a daily processing rate that averages from 26,000 to 35,000 pounds per day
- operating at speeds ranging from 70 feet per minute (fpm) to 105 fpm

Visit www.sweed.com for more information.

HENDRICKSON PRIMAAX EX CHASSIS. Hendrickson, a Boler company based in Woodridge, Illinois, has partnered with Peterbilt Motor Co. to offer Primaax EX, a severe-duty vocational air suspension system, as part of the chassis enhancements for the Peterbilt 567, 569 and 589 models. Primaax EX:



- will be available in capacities of 46,000 and 52,000 pounds, has a 10-inch ride height and is compatible with drum and air disc brakes
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SERCO 8500-SR32, 8500-SR34 SERIES LOADERS. Serco Loaders, based in Two Harbors, Minnesota, and part of Quebec-based GRYB International, has introduced its 8500-SR32 and 8500-SR34 series loaders. The company says the new material handlers have been engineered to meet the evolving demands of the storm cleanup industry and:

- have the longest reach in its loaders' class at 32 feet, 6 inches and 34 feet, respectively
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- have a tandem pump as standard to provide triple pump with dedicated swing section features
- provide easy access for field technicians to components such as the motor, valves and gearbox
- have spare parts available throughout Serco's dealership network and its Minnesota facility.

Visit www.sercoloaders.com for more information.

Photos courtesy of Sweed, Hendrickson and GRYB International

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AN EYE ON OUTPUT

Gershow's focus on quality extends to monitoring the output of all its processing operations. On its nonferrous plant, for instance, the zorba enters a sophisticated counting regimen, with output from each of the eight lines dropping onto a designated scale conveyor. That scale conveyor incrementally moves until it reaches a predetermined weight, then it clears itself and begins counting again.

The process allows the plant's control system to record precise production levels for each zorba fraction produced as well as for the plant's overall production.

"We gather information and manage it," Elliot says. "We pay attention to nonferrous recoveries of the shredding plant on a daily basis."

He says modernizing has enabled Gershow to monitor data hourly. "At any one point in time, we can tell you during the day what we produce and what our recoveries were," Elliot adds. "That information has real value in operating the business.

"In the past, that information was not as easily attainable. It could be a week or 10 days old, and you could have a bad production day or a bad recovery day, and it would be hard to figure out why."

That attention to detail extends to Gershow Recycling's other processing operations. "At the shredding plant, we weigh the shredded steel that comes out [and] the waste comes out," Kevin says. "Every other processing plant we have, inputs and outputs are weighed as course of production."

Gershow has been gathering data on its processes for more than 30 years, he says, relying on more manual means in the past. "Now, we know instantaneously because it's all electronic."

The company monitors its production numbers regularly. "Everybody's involved in paying attention to production reports," Bertuccio says. "The ability to produce tons is a factor. And, at the same time, when you're producing tons, you want to make sure you have your recoveries. You can produce tons and have poor recoveries, so, it's a balance," he says.

Having a clear line of sight into its physical operations, the willingness to invest in processing capacity and the foresight to anticipate the needs of its community and the consumers it supplies are likely to ensure Gershow Recycling's legacy for decades to come. RT

The author is editorial director of Recycling Today Media Group and can be reached at dtoto@gie.net.

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Joy Rifkin

SUSTAINABILITY MANAGER AT LRS

Joy Rifkin has always been passionate about sustainability. As a biology and environmental studies major at the University of Wisconsin, Rifkin was involved in many sustainability initiatives around campus, including the Big Red Go Green project, where she helped lead a residence hall energy competition, implement campuswide composting systems and advocate for policies to combat climate change.

After graduation, Rifkin began a career as a middle school science teacher with Chicago Public Schools, where her dedication to sustainability did not waver.

"I was always incorporating sustainability projects into the work we did in the classroom," Rifkin says. "Measuring our recycling, collecting data around cafeteria waste, doing trials with composting—we were always doing projects with waste because it was tangible; it was something students could really understand."

After three years as a teacher, she pivoted to sustainability work. As a zero-waste coordinator and sustainability specialist with the New York City Department of Education, Rifkin designed the Zero Waste Schools Program. The program first was implemented at approximately 110 schools across Brooklyn and Manhattan, eventually expanding composting systems to almost 1,800 schools.

Rifkin since has returned to Chicago as sustainability manager for LRS, a Rosemont, Illinois-based waste and recycling provider. In her 2 ½ years with the company, she continues to connect education, community outreach and sustainability operations, including her work on LRS' early employment program, which pairs students studying to be diesel technicians with experienced LRS mechanics.

"We have to engage with the communities we serve," she says. "We have to listen and hear what their struggles are. We have to share our perspective and the challenges that we face every day as a business [and] an essential service."

In the following interview, Rifkin discusses how her background in education helps in her current work and the benefits of LRS' early employment program.

RECYCLING TODAY (RT): How has your teaching background informed the work you do now with LRS?

JOY RIFKIN (JR): You can do all the retrofits on the back end, you can do all the data-gathering, but if you're not communicating why this matters, what we're doing [and] how we're doing it, you lose the impact dramatically of what you could have. So, I think education is so foundational to this work [and] I'm so grateful I have that background.

I was always thinking, "How can I bring this to life for seventh and eighth graders? How can I make them excited about this project or this experiment?" Having that lens and coming into working with waste and sustainability, not only did it help me in schools in New York City … but it helps me here because we're interacting with stakeholders from all different backgrounds. … I think education is just one of those threads that I'm so grateful to have in my life and I think it really brings an important element to sustainability work.

RT: How did you implement LRS' early employment program?

JR: We work with Universal Technical Institute, a technical university training diesel and auto mechanics. They have an early-employment model we took and modified.

Students studying to be diesel technicians [are] paired with … journeyman mechanics who work at our LRS facilities. These students work part-time while they are in school. They come to LRS for a few hours every day, learn from a journeyman mechanic and then take classes at Universal Technical Institute. When they graduate, if they want to be hired full-time and they interview, they can get a position at LRS, and we will contribute to paying back their student loans.

FRESH PERSPECTIVE

> **"The foundation of thinking about how we communicate these important issues is so vital to doing good sustainability work."**



+ Hear the full interview by visiting *Recycling Today*'s podcasts section at www.RecyclingToday.com/tag/podcasts.

Do you know any new or young professionals in the recycling industry? Send suggestions to Tess Kazdin at tkazdin@gie.net.

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ON THE COVER
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Plenty of room to grow

Last year ended with lots of uncertainty surrounding recovered paper markets, particularly as old corrugated containers (OCC) pricing and box demand plummeted.

The conditions didn't leave recyclers with much optimism at the time, but as 2023 draws to a close, there is more optimism—and lots of room for growth, particularly when it comes to recovery.

Sentiments at the Paper & Plastics Recycling Conference (PPRC) in Chicago this October shifted slightly from the doom and gloom of the 2022 event, where there was talk of "dying" grades like sorted office paper and an "artificial ramp-up" in demand from the COVID-19 pandemic that brought on difficult market conditions, to a renewed focus on supplying the nearly 5 million tons of capacity that have come online over the last several years.

"We've kind of taken the whole industry, thrown it up in the air and shuffled the deck," John Grinnell, vice president and general manager at Delaware, Ohio-based Greif Inc., said during a session at PPRC. (Read more from Grinnell in "Where do we go from here?" starting on Page S10.)

The market hasn't made a full recovery and supply remains a concern; however, this year's high-profile mill startups as well as companies' optimization strategies have changed the playing field.

Fort Mill, South Carolina-based Domtar kicked off the year with the opening of its $350 million recycled paper mill in January—the company's first 100 percent-recycled mill—which is projected to produce about 600,000 tons of linerboard and corrugated medium annually. Cascades Inc., Kingsey Falls, Quebec, followed in May with the opening of its Bear Island recycled containerboard mill in Ashland, Virginia, while Conyers, Georgia-based Pratt opened its $700 million recycled paper mill and box plant in Henderson, Kentucky, in September, marking the company's sixth recycled paper mill in the U.S.

Of course, the question remains, if supply still is a concern, where will all these facilities source the feedstock needed to maintain operations?

For Shawn Logan, director of commodity sales at Houston-based WM Recycling Services, the answer is in the material already flowing through recycling facilities. "You don't have to go out and get new accounts to then get some new OCC—it's already there," he said. "There's good material in [residue] that the technology thus far just hasn't been able to capture."

Grinnell, too, emphasized technology could set up recyclers and mill operators for success, and both men noted how much the current system could improve.

It would appear, then, that hope is on the horizon as we close the door on 2023.

But as those in the recovered paper industry know all too well, market volatility never truly goes away, and when speaking about what the future holds, Ryan Fox of Bloomberg said, "Ask anybody what's going to happen three months from now, [and] they're going to be wrong." RT



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BPA WORLDWIDE BUSINESS







Kadant PAAL Konti X500 prevents baler bottlenecks

RePower South in South Carolina chose a Kadant PAAL Konti X500 series baler to handle numerous commodities and increase plant efficiency.

When RePower South opened the Berkely County Recycling and Recovery Facility in 2019 in Moncks Corner, South Carolina, the priority was to provide a comprehensive and cost-effective recycling program for a community that previously had few programs in place.

Founded in 2013, Charleston, South Carolina-based RePower South had seen steady growth since opening its first facility in Montgomery, Alabama, and knew it needed equipment capable of handling the increased volume it was seeing.

"We have been constantly increasing the volume coming in and the volume of commodities we're shipping out year by year," Berkely County Plant Manager Greg Smith says.

According to Smith, that ongoing growth prompted the need for a baler that could handle the nearly 500 tons per day of municipal solid waste and 9 to 10 tons per day of single-stream material from commercial customers that come to the Berkely County facility.

Smith says RePower wanted a baler that was easy to maintain, could run up to 24 hours a day with minimal operator support and be able to handle various commodities, including high-density polyethylene and polyethylene terephthalate, mixed paper and old corrugated containers, as well as aluminum cans.

RePower South partnered with Eugene, Oregon-based Bulk Handling Systems (BHS) when searching for a new baler, and, ultimately, chose a Kadant PAAL Konti X500 for its ability to achieve high throughput and high bale weights with low energy consumption.

"Kadant PAAL [was] there hand-in-hand with us the whole time, optimizing the recipes and fine-tuning [the baler] to meet our expectations," Smith says.

Smith says the baler has been seamlessly integrated into RePower's operations and runs about 16 to 18 hours a day, adding that the baler has never caused a bottleneck in the plant and, in fact, has increased productivity and efficiency.

"No matter what commodity goes through it, it comes out really neat, square [and] perfectly tied and gets to go to the last process of the warehouse without having to come back and do it again," he says.

While the baler has needed little maintenance since its installation in 2019, Smith says Kadant PAAL's commitment to service has stood out, noting the company has been a phone call away to address any issues that have come up.

"As far as the service with Kadant PAAL [and] the response time, we couldn't be happier," Smith says. "They've been very helpful, very responsive—one phone call away. One ability I particularly like is their capability to remotely to log into our system wherever they are and help us to diagnose any issues even if they're not on-site. Nine times out of 10, they're able to log in and walk us through what's going on."

RePower's goal is to add several more recycling facilities, and, after employing the Konti X500, Smith says there has been no discussion about moving away from Kadant PAAL for its future baler needs.

"We highly recommend [the Konti X500] for the low maintenance and the ease of the instruction that comes with it and the service provided if you do run into a problem," Smith says. "You have the help that you need when you run into areas where you're not quite sure what to do. It's a phone call away and Kadant PAAL can walk us through the process, and that's been very helpful in maintaining our uptime."

More information on the Konti X500 and other Kadant PAAL balers can be found at www.kadantPAAL.com/en-us/products.

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KEEPING IT MOVING

Despite a difficult year for the recovered paper industry, North American mills continue to consume large volumes of material as markets slowly bounce back.

BY MARISSA MCNEES

The start of 2023 looked much different than what the end of the year is projecting to look like—and recovered paper generators and consumers likely are thankful.

Prices for bulk grades plummeted at the end of 2022, and box demand followed closely behind, leaving many wondering what the recovered paper landscape would look like, particularly as several high-profile recycled paper mills were set to come online.

But North American paper mills continued to absorb large volumes of recovered paper in 2023. In the two years since *Recycling Today* last published its list of the largest recovered paper consumers, mills took in approximately 30.8 million tons of material compared with roughly 27.8 tons in 2021.

FINALLY, SOME STABILITY?

When the last list was published in 2021, the accompanying article notes that "stability has been a hallmark of the sector despite trade wars, a pandemic and supply chain disruptions," with paper and packaging producers WestRock, Atlanta; International Paper (IP), Memphis, Tennessee; Cascades Inc., Kingsey Falls, Quebec; and Pratt Industries, Conyers, Georgia, at the top of the list once again.



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NORTH AMERICA'S LARGEST RECOVERED PAPER CONSUMERS

Company Name, Website	Headquarters	CEO or President	Tons of Recovered Paper Consumed, 2023	No. of Mills	No. of Employees	Grades Consumed
1. WestRock, westrock.com	Atlanta	David. B Sewell	5.5 million+	30+	58,000	OCC, SRPN, DLK, mixed paper, boxboard cuts
2. International Paper, internationalpaper.com	Memphis, Tennessee	Mark S. Sutton	5 million+	28	39,000 (global)	OCC, DLK
3. Pratt Industries, prattindustries.com	Conyers, Georgia	Brian McPheely	2.38 million	6	10,000	OCC, mixed paper
4. Cascades Inc., cascades.com	Kingsey Falls, Quebec	Mario Plourde	2.23 million	21	10,000	OCC, DSOCC, DLK, mixed paper, SOP, SRPN
5. Georgia-Pacific LLC, gp.com	Atlanta	Christian Fischer	2.1 million	9	30,000	OCC, DLK, mixed paper, SOP, high grades
6. Bio Pappel, biopappel.com/en	Mexico City	Miguel Rincon Arredondo	2.05 million*	23	20,000	OCC, other grades
7. Greif Inc., greif.com	Delaware, Ohio	Ole Rosgaard	1.46 million*	14	12,280	OCC, SRPN, DLK, mixed paper, SOP, tube scrap
8. Graphic Packaging Intl., graphicpkg.com	Atlanta	Michael P. Doss	1.4 million	7	3,450	OCC, SRPN, boxboard cuts, high grades
9. Sonoco Products Co., sonoco.com	Hartsville, South Carolina	R. Howard Coker	1.4 million	13	21,000	OCC, SRPN, mixed paper, SOP, DLK, tube scrap
10. Packaging Corp. of America, packagingcorp.com	Lake Forest, Illinois	Mark W. Kowlzan	1.12 million*	7	15,500	OCC, DLK
11, New-Indy Containerboard, newindycontainerboard.com	Ontario, California	Scott Conant	841,500*	4	2,000	OCC
12. Smurfit Kappa N.A., smurfitkappa.com/us	Irving, Texas	Anthony Smurfit	841,500*	5	48,000 (global)	OCC, mixed paper
13. Kruger Inc., kruger.com	Montreal	Joseph Kruger II	775,000	19	6,000	OCC, mixed paper, SOP, SWL
14. Essity USA, essityusa.com	Philadelphia	Magnus Groth	707,000	5	48,000 (global)	OCC, mixed paper, printers mix, SOP, high grades
15. Green Bay Packaging Corp., gbp.com	Green Bay, Wisconsin	William F. Kress	750,000	2	4,500	OCC, mixed paper
16. Copamex, copamex.com	San Pedro Garza Garcia, Mexico	Alonso Gonzalez	561,000*	3	2,590	OCC, mixed paper
17. ND Paper, us.ndpaper.com	Oakbrook Terrace, Illinois	Ming-Hsiung Liu	448,800*	4	15,000 (global)	OCC, mixed paper
18. Kimberly-Clark, kimberly-clark.com	Dallas	Michael D. Hsu	415,140*	4	44,000	OCC, SOP
19. NORPAC, norpacpaper.com	Longview, Washington	Craig Anneberg	400,000	1	260	OCC, mixed paper, DLK
20. Domtar, domtar.com	Fort Mill, South Carolina	Steve Henry	285,000	1	180	OCC

+ per 2022 sustainability report
* estimate



It seems counterintuitive to describe the sector as "stable" after a year of market volatility, but that message still rings mostly true when comparing the major players at the top of the list.

WestRock and IP once again are Nos. 1 and 2, respectively, with WestRock upping its recovered paper consumption to about 5.5 million tons and IP increasing its to 5 million tons, according to the companies' most recent sustainability reports.

Pratt and Cascades, two companies with highly anticipated facility openings in 2023, swapped spots on this year's list, but still sit near the top.

Cascades' Bear Island containerboard mill in Ashland, Virginia, was the first of these facilities to open. The site officially opened in May after a lengthy construction and startup process that saw numerous setbacks related to labor and material availability. The $525 million mill has annual production capacity of 465,000 tons for lightweight, 100 percent-recycled containerboard. In February, Cascades projected the Bear Island mill to produce approximately 235,000 short tons this year.

Pratt's $700 million 100 percent-recycled paper mill and corrugated box factory in Henderson, Kentucky, officially opened in late September. It is capable of producing 1,500 tons of recycled paper daily and marks the company's sixth such mill in the United States.

"Of course, we've seen pricing on OCC stabilize recently and [even] increase, and we attribute that, in our case, to these new high-capacity, high-efficiency, large-format machines that are requiring larger and larger amounts of feedstock in an environment where there's not quite as much of the stuff being made as there was before," Shawn Logan, director of commodity sales for Houston-based WM said during the Paper & Plastics Recycling Conference (PPRC) this past October.

Cascades and Pratt were not the only recovered paper consumers to have opened new mills since the previous edition of the list was published.

Graphic Packaging, No. 9 on the 2023

CONTINUED ON PAGE S22

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WHERE DO WE GO FROM here?

Sinking packaging demand has left recyclers wondering if the OCC market has reached bottom.

BY **MARISSA MCNEES**

The e-commerce boom of 2020 and 2021 is long over, and paper and packaging companies have been confronting how to navigate the current market landscape as box demand hit rock bottom earlier this year and old corrugated containers (OCC) pricing followed.

"Forecasting OCC prices is an incredibly difficult thing, and one of the reasons is it's one of the most volatile commodities in the world," said Bill Moore, moderator of the session Corrugated Boxes, Containerboard and OCC: Where Do We Stand? at the Paper & Plastics Recycling Conference (PPRC) in Chicago in October.

Moore, president of Atlanta-based paper consultancy Moore & Associates, was joined by panelists Ryan Fox, corrugated packaging market analyst at Bloomberg; Shawn Logan, director of commodity sales at Houston-based WM Recycling Services; and John Grinnell, vice president and general manager of Delaware, Ohio-based Greif Inc.'s recycling business.

U.S. box shipments peaked in 1999 and were down for a dozen years when China became the "manufacturer to the world," Moore said, noting that it took e-commerce to change that.

In 2011, e-commerce began to increase, inflating box shipment numbers in a run-up that culminated in the online shopping boom during the COVID-19 pandemic. "We've had a box recession since then," he said.

BIG CHANGES IN BOX DEMAND

From 2020 to 2023, approximately 5 million tons of containerboard capacity have come online, most of which consume recycled fiber, according to Moore.

"But there have been 12 capacity shutdowns in the last year with the box recession that we're going through, and it took out almost half of that capacity," he added.

In February 2023, the Fibre Box Association, Itasca, Illinois, released data revealing an 8.4 percent decline in 2022 fourth-quarter box shipments compared with the previous quarter—the largest decline since 2009—and the lowest cardboard manufacturer operating rates since 2009 at 80.9 percent.

The news wasn't much better several months later, when Jeffrey Kleintop, managing director and chief global investment strategist at Charles Schwab & Co. released a report in line with other analysts, predicting continued low box demand.

During the PPRC session, Fox presented similar data that showed box demand has continued to decline throughout the year. "If you look at demand trends, if it continues to track



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the way it has been tracking, we will continue to see this overall trend line go down," he said.

Fox projected December box demand will be flat year over year, which he said is not necessarily a great story. "Last December was horrible—one of the worst [months] ever [for box demand]," he said. For about 50 years, Fox said average box consumption per capita was about 1,200 square feet per person. For the first time in several years, his data showed this year's average per capita consumption dipping below that to about 1,140 square feet per person.

"Everyone wants to know if we've hit bottom yet," he said of box demand. "I don't know."

WHERE IS ALL THE OCC?

With the many notable containerboard startups in the last year, a big question on the minds of mill operators, in particular, is where the feedstock will come from if the cardboard box recession continues.

But the panelists agreed supply is not an issue, and Moore noted the industry is not running out of OCC because a "fair amount" gets disposed of with the potential to be recovered.

"Europe and developed Asia and the U.S. are all pretty close to maximum recovery," he said. "There are still underrecovered sectors, like multifamily and small commercial, and we hopefully are going to continue to use more boxes every year, so we're not running out.

"Developing Asia is increasing [its] recovery—recovery in places like India, Indonesia, Vietnam and Thailand [is] fairly low—so they can grow their recovery, and that will make more OCC readily available," Moore continued.

He projected that from 2011 to 2025, OCC supply is going to grow from 29 million tons to 36 million tons, and containerboard will grow from 40 percent of the market to 59 percent. "It's all about OCC and containerboard," Moore said.

Logan said OCC already is flowing through material recovery facilities (MRFs). WM manages approximately 15 million tons of total material, and most of that volume is paper, he said, with 35 percent of that being OCC.

In terms of reduced supply, Logan suggested examining MRFs' residuals. WM has invested heavily in its MRF operations over the past several years and reports a 51 percent reduction in the volume of recyclables that end up in residue. "We're looking at incremental volume," he said. "You don't have to go out and get new accounts to then get some new OCC—it's already there. … There's good material in [residue] that the technology thus far just hasn't been able to capture, [but] we're getting close on that."

Moore predicted a slight decline in OCC exports into next year, seeing that as a factor that will increase domestic OCC supply.

For Grinnell, that spells good news for Greif, which manages approximately 4 million tons of recovered fiber annually and consumes primarily OCC at its mills, producing containerboard, coated recycled board and uncoated recycled board.



Shawn Logan of WM speaks during the Paper & Plastics Recycling Conference in Chicago in October.

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"When we see a pickup in containerboard production, it's going to take a while for that stuff to come through the supply chain and emerge again as supply of recycled fiber to our system," he said. "It's going to be an extended period before we really see supply resumed to the level that we did."

"What we've seen is an increase in OCC prices over the last six months," Bloomberg's Fox added. "This is mainly driven by reduced supply. Why reduced supply? Well, contrary to popular belief, there's this thing called the recession, and you may not think we're in it, but I do say we're in it."

GETTING THE BEST PRICE

Despite the slight price increase, OCC still is not fetching nearly as much per ton as it was in late 2021 and early 2022. At its peak last year, the national average OCC price was $130 per ton. It then tanked to $30 per ton by the end of 2022.

By November of this year, the average U.S. OCC price was $75 per ton thanks to an eight-month run-up, and Moore said the market likely had hit bottom at the end of 2022 as prices continued to rise.

He compared the volatility of OCC on a quarterly basis with other commodities such as copper, cotton and brent crude oil. When averaged out, OCC is one of the most volatilely priced commodities in the world, Moore said.

"The question a lot of us get … is, 'How in the world can OCC prices be going up when there's so much downtime [and] so little demand in the industry?'" Grinnell said. "It seems counterintuitive.

"Capacity and demand are two different things, right? We know there's a lot of underutilization of capacity right now, but that doesn't change the fact that a lot of where the consumption is occurring and who's doing the buying has changed."

When looking at pricing and demand, Grinnell said choosing a reference point makes all the difference. For example, if the reference point is when packaging demand was "as good as it's gotten" in the first half of 2022, the story of today becomes the bottoming out of the market. But, if the reference point is early 2023 when OCC pricing hit its trough, "we see it's a pretty different story," he said.

"It's modest, it's moderate, it's

incremental, but our industry, and particularly OCC, reacts to incremental change," Grinnell added. "Pricing moves with relatively small shifts in supply-demand and, in this case, the demand has actually seen a relatively positive trend since we got to that trough."

He suggested using technology to frame a more realistic picture of where the industry is headed at any given moment. "When I want a hotel room, do I pick up my phone and start making calls? I did that 20 years ago, but I don't have to do that anymore," Grinnell said. "We live in a world where a lot more is possible with technology; we don't have to keep doing things the way we did them 20 years ago, and I think that kind of visibility and real-world data would help guide the industry to a more realistic view of where things are headed.

"Nobody can predict what's going to happen to the price. There's a lot of things over the long term that [can] continue to support the price of OCC. We've got inflation working against us, we've got lower economic activity domestically and overseas that's working against us, and these things will recover as we go through time."

Moore added, "When we look at the world growth demand by grade, it's really pretty clear to see that OCC … is where the action is." RT

The author is managing editor of *Recycling Today* and can be reached at mmcnees@gie.net.



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DISRUPTION IN THE SYSTEM

Four states have adopted EPR legislation, with more potentially on the way. How these laws will affect the recycling industry remains uncertain.

BY CHRIS VOLOSCHUK

Since 2021, four states—Maine, California, Oregon and Colorado—have adopted extended producer responsibility (EPR) legislation. Two others, Illinois and Maryland, have passed what some recyclers have dubbed "pre-EPR," or laws requiring states to perform needs assessments and envision what EPR could look like.

As states increasingly consider EPR or similar policies, they could be viewed as a disruption of established recycling systems. During the session Legislative Disruption at the Recycling Today Media Group's Paper & Plastics Recycling Conference in Chicago in October, Resa Dimino, managing principal at Ann Arbor, Michigan-based Resource Recovery Systems and a managing partner at its policy subsidiary, the Signalfire Group, said several reasons contribute to EPR's growing presence.

"First and foremost is to increase recycling, increase diversion and increase recovery," Dimino said. "We all know recycling rates have been stagnant for a long time, and there are a lot of stakeholders who are unhappy with that state of affairs and want to see us bring change [and] see how we can do things differently. EPR has proven to increase recycling across the world and across the U.S., and so it's a good approach for this."

She also said EPR can help reduce recycling costs for local governments that might not have the resources to expand existing programs. Thirdly, she said, EPR can steer producers toward incorporating the cost of end-of-life management into a product or package.

EPR and similar policies, though, can look very different from state to state.

EYE OF THE BEHOLDER

At the session, Robin Wiener, president of the Washington-based Institute of Scrap Recycling Industries (ISRI), noted not all forms of industry disruption are negative, "especially that which is industry-led."

But, she added, some legislative disruptors can be negative to a certain extent even though they're being done in the name of solutions and the advancement of recycling. "While these [laws similar to EPR] go back many years, it's really only over, maybe, the last five to six years we've really seen this tsunami of pushes on the state level, and even the federal level, for EPR, bottle bills and such," she said. "You can name them all and they're all done to solve the problem and solve the recycling crisis."

In Wiener's estimation, legislation in China—the National Sword policy enacted in 2018 that restricted scrap imports—disrupted the U.S. residential recycling system the most. "Even though that's probably less than 15 percent of all recycling in the U.S., that's what everyone knows," she said. "It's that blue bin at the end of the driveway. So, the local councilman, regulators [and] policymakers, that's when they

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ISRI President Robin Wiener outlined the organization's position on EPR policy during the Paper & Plastics Recycling Conference in October.

see and hear about that [and] they think recycling is broken."

Wiener said there are other triggers, such as growing complexity in packaging design, a lack of control over what residents place in their bins, quality issues as well as issues on the demand side. "There are these problems that have been coming together that have resulted in policymakers wanting to help us, and that comes in the form of these legislative disruptors," she said.

ISRI generally is not supportive of EPR because of the concern it could disrupt the marketplace and the current recycling infrastructure that works well, Wiener said, though she admitted EPR can be helpful at times, such as when ISRI worked with the U.S. Environmental Protection Agency, steelmakers and automakers to develop a system to remove mercury switches from end-of-life vehicles that were contaminating ferrous streams.

"It was temporary in nature," Wiener said of that system. "Once the [switches] were all out, it stopped, and that's what we view as a working EPR system. The design is to get those hard-to-recycle or difficult items that we need out of the stream."

When EPR laws are being formulated, Wiener said recyclers need to be at the table to help ensure a system that works. She advocated for third-party assessments that measure what the capacity is, where the gaps are and what the costs are, saying EPR systems need an off ramp—especially for paper packaging—to ensure the legislation only covers those materials for which EPR is needed because there isn't a market.

"Right now, [paper] is a mature market," she said. "For those materials that are included, you need that off ramp, so that once the market matures, it's no longer part of the system."

In addition, she said EPR laws should feature a list of excluded items to keep EPR narrowly focused on the materials that would benefit from the legislation; fees should reflect the true costs of the system; and recyclers should be included as part of an advisory board to help design and oversee the EPR system.

Shannon Crawford Gay, director of recycling and environmental policy at Houston-based WM, which operates 97 material recovery facilities (MRFs) throughout North America and recycles 7.3 million tons of paper annually, said the company is making significant investments in improving its recycling operations to produce higher-quality bales, but legislative disruption will impact its ability to meet those goals. Some of that impact is viewed positively, and some of it still is unknown.

WM's position on EPR varies by state, but Crawford Gay said the company prefers that local control is maintained, honoring existing infrastructure, contracts and franchise agreements. "We can work within a variety of systems," she said, "but our preference for these EPR systems, which are generally based on residential recycling, would be to continue working with the municipalities as opposed to a PRO [producer responsibility organization] that then contracts with the municipalities."

She noted WM has long supported EPR policies for large, bulky materials and items that shouldn't be placed in residential bins but has taken a different stance on each of the four states that have enacted sweeping EPR legislation for paper and packaging.

The company was involved in and supported the formation of Oregon's system, but it did not support the policy in Colorado because of "so many unknowns," as well as its use of a PRO that will have a great deal of control over the system. WM had a seat at the table as California's system was built but chose a neutral position. The company doesn't operate in Maine and chose not to engage in the debate there.

SHINING EXAMPLES

Wiener used ISRI's recently released Fiber Recycling Readiness Tool as an example of a positive disruption guided by the recycling industry.

The research-based online tool was developed to assess the compatibility of typical fiber-based packaging with the U.S. residential recycling system and help boost paperboard packaging recycling. The tool also can help brands use design for recycling principles to create fiber-based packaging that can flow through established recycling infrastructure in the U.S.

According to ISRI, the tool can help decrease contamination at MRFs and increase the quality of bales sent to consuming mills. It automatically scores a set of criteria and shares a color-coded result to determine whether the packaging meets the criteria (green), has challenges requiring modifications (yellow) or does not meet the criteria (red) and also provides individualized

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feedback on design choices that could improve a package's recyclability.

Wiener said a manufacturer successfully used the tool for its fiber-based packaging for shipping televisions.

"We're working very closely with The Recycling Partnership, which is utilizing it as well," she said. "We've worked with AF&PA [American Forest & Paper Association] and other partners to make sure that this works with other systems that are out there."

She also pointed to ISRI's work with manufacturers and brands on designing products for recycling and recognizing companies that do so, such as Hartsville, South Carolina-based Sonoco. Last year, that company developed a fiber-based blister package that is fully recyclable and replaces a plastic version of the blister packaging.

Wiener said examples of beneficial disruption include ISRI's involvement in government public-private partnerships, promoting recycling education for students in kindergarten through 12th grade and giving recognition to policymakers who understand the importance of recycling.

DIRECTING THEIR GAZE

As energy around recycling policy gains momentum, the panel considered the best ways to direct it.

Wiener said energy at the federal level should be directed to education and understanding the benefits of recycling.

Crawford Gay recommended states considering EPR or similar policies should address gaps in their existing systems. She used pending EPR legislation in the state of Washington, which already has robust recycling programs in place, as an example.

"With Washington state and [its EPR] bill, one of the things we really want to recommend is to look at where the gaps are in the system," she said. "Where are the places in Washington state that don't have recycling? And if there are these places that don't have access to recycling, what does it cost to get it? What does it look like in terms of improving capacity within that state? [WM's] preference is that if states want to use legislation to boost their recycling numbers, it can't just be a blanket."

The panelists agreed the key to successful legislative disruption is residents participating in the recycling system.

"We've got technology, smart trucks and contamination fees, but at the end of the day, how can you work to encourage people to participate," Crawford Gay said. "That is where the recycling chain kind of starts is that consumer making that decision." RT

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HOPE despite the headwinds

The current macroeconomic environment presents challenges, but Latin American board producers could see growing demand for their products given nearshoring efforts in the U.S.

BY DEANNE TOTO

The move toward nearshoring could benefit Latin America's paperboard sectors, according to a presentation by Vincent Leon, a principal with Afry Management Consulting of Stockholm, this October at the Recycling Today Media Group's Paper & Plastics Recycling Conference session Demand Growth in Latin America. However, macroeconomic factors are likely to create headwinds.

MACROECONOMIC FACTORS

Leon said gross domestic product (GDP) growth in Mexico and Latin America in 2024 is forecast to be 2.1 percent, while South America's is expected to be 1.2 percent and the Caribbean's 2.8 percent.

"When we think of the macroeconomic factors that impact GDP development, basically, we're looking at a combination of a lot of negative and uncertain factors starting with the global headwinds—the slowdown of the U.S. [and] European economies, as well as the Chinese economy, that can impact the Latin American countries as well," Leon said.

The situation is further affected by political uncertainty and tight financial conditions that slow consumer spending and make capital more expensive.

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Pictured, from left: Vincent Leon, Jonathan De Leon, Adriana Williams and Rusty Getter

One positive trend Leon cited was the possible effects of nearshoring, or bringing supply chains closer for U.S. companies. He said containerboard producers in Mexico and Central America likely would benefit the most from this trend starting in 2024 and 2025, an assessment panelists Jonathan De Leon, fiber procurement and logistics manager for Mexico City-based Bio Pappel, and Adriana Williams, senior vice president of Latin America at Newport CH International, which is headquartered in Irvine, California, agreed with.

"Nearshoring is going to be a very good opportunity for the Mexican market for this Central American market," Williams, who is based in Miami, said.

She added that the packaging market will benefit as these manufacturers will need boxes to package their goods for shipment to the U.S. or Canada, creating more old corrugated containers, or OCC, to supply containerboard makers in North and Latin America.

De Leon, who is based in Phoenix, added that Mexico and Latin America could benefit as companies move out of China to these locations. "We already started to see it in areas like Tijuana [and] Juarez," he said.

Bio Pappel continues to "strategically place plants, knowing that this is to come," De Leon said. "We have a mega box plant in Tijuana. We make all the boxes for Samsung," which makes TVs nearby.

Bio Pappel opened two box plants in the last six months in the area and is building a third in Dallas, he added.

PAPER DEMAND AND PRODUCTION

Latin America has roughly 32 million tons of paper production across Mexico, Brazil, Argentina, Columbia and Chile, Leon said. Mexico and Brazil each account for about one-third of the total installed regional capacity at 11 million tons and 10.1 million tons, respectively.

He said 40 percent of this capacity, or 13.6 million tons, is used to produce containerboard, including liner and medium. The second-largest market is tissue and hygiene products at 6.9 million tons, followed by graphic paper, which includes newsprint, office paper or other publication papers, at 5.7 million tons. The fourth-largest market is carton board at 3.6 million tons.

Recovered paper makes up most of the furnish for Latin American paper mills, Leon said, totaling nearly 82 percent for containerboard production, 63 percent for tissue and 55 percent for carton board.

The containerboard market is forecast to grow at a rate of 2.2 percent annually from 2025 through 2035, Leon said, driven by consumer spending and the development of e-commerce. "Between 2022 and 2035, we expect about 7 million tons of new demand," he added. "So that's the equivalent of 10 to 12 new machines—about one per year, basically."

Carton board demand is projected to grow at an annual rate of about 2 percent from 2025 through 2035, also driven by consumer spending. "We are looking at 0.8 million tons of additional capacity, so that's about two machines," Leon said.

Tissue demand is forecast to increase by 3 percent per year from 2025 through 2035, while graphic paper demand, on the other hand, is forecast to decline by 1.2 percent per year from 2025 through 2035 as paper is replaced by digital formats in the office paper, newsprint and advertising paper segments, he said. That decline will pressure the availability of premium recovered paper grades, such as coated book stock, sorted office paper and sorted white ledger.

Leon said 3.3 million tons of additional papermaking capacity are expected to come online in Latin America by 2026, mostly in Mexico and Brazil. More than half that capacity will use recovered fiber.

RECOVERED PAPER DEMAND GROWTH

Apparent paper recovery in Latin America is 45 percent, according to Leon's presentation, putting it well below that of Japan (84 percent), western Europe (78 percent) and North America (64 percent).

Regarding the flow of recovered paper from the U.S. into Latin America, Mexico is the leading destination. In 2021 and 2022, U.S. recovered paper exports to Mexico totaled 3.3 million tons and 3.2 million tons, respectively, up from the historical average of 2 million tons per year, according to Leon's presentation.

Panelist Rusty Getter, director of the commodities team at Austin, Texas-based Balcones Recycling, said next year will be a repeat of this year when it comes to recovered paper markets in Mexico.

"We do see some positive trends, certainly in the bulk grades of OCC and mixed paper. But it's been slower to take hold in Mexico in the last several weeks than you would typically see," he said.

Williams said it is difficult to predict what will happen in 2024. "But what we see with all our customers is that most of the mills are still full of inventory, … so the movements are very, very slow."

By year's end, much of that inventory will be sold, she said, and mills will be buying recovered paper by early 2024.

"This is what I expect, but … we can change anytime," Williams added. **RT**

The author is editorial director of the Recycling Today Media Group and can be reached at dtoto@gie.net.

FINDING COMMONALITY

As head of Pratt Recycling, Shawn State has been at the forefront of a paper industry that has seen increased investments and opportunities.

EDITED BY MARISSA MCNEES

For more than 20 years, Shawn State has seen the recycling industry evolve as sustainability initiatives have prompted more investments in recycling and automation has shifted the way recyclers operate. Through it all, he says, communication has been the key.

State is president of Pratt Recycling, the recycling company of Conyers, Georgia-based Pratt Industries, which is the fifth-largest corrugated packaging company in the United States and one of the largest privately held manufacturers of 100 percent-recycled containerboard in the world. According to the company, Pratt Recycling diverts as much as 3 million tons of material from landfill annually.

Pratt Industries recently opened a paper mill and box plant in Henderson, Kentucky—its sixth 100 percent-recycled paper mill in the country, with its other mills being in Conyers; New York City; Shreveport, Louisiana; Valparaiso, Indiana; and Wapakoneta, Ohio.

The paper machine at the Henderson site can produce up to 1,500 tons of recycled paper daily and will be used to make corrugated boxes at the company's converting plants, including the box plant co-located with the Henderson mill.

Pratt Recycling operates 19 material recovery facilities (MRFs) where it sources material for its parent company's mills, and Pratt Industries also uses the production scrap from its box-making operations. Pratt says some of the material that cannot be recycled is used as fuel for its clean energy plant.

"It's exciting to have gone from the company we were in 2001 when I started with Pratt to the third-largest consumer of recovered fiber in North America today," State says. "Every day brings a new challenge."



Shawn State

State also is president of the Institute of Scrap Recycling Industries (ISRI) Paper Stock Industries (PSI) chapter, a national chapter of ISRI established in 1962 that represents paper processors, brokers, packers, mills and others involved in the paper recycling industry.

In the following interview, State discusses the future of the paper recycling industry, the role of automation and the importance of relationships in business.

***Recycling Today* (*RT*):** How did you get your start in the recycling industry and what does your current role entail?

Shawn State (SS): I had worked in the corrugated packaging industry, both with Pratt and a few other corrugated box companies, prior to 2007 when I started with Pratt's recycling division. Within the division, I have been responsible for operational and sales roles on a local and

Main photo: © Daco I stock.adobe.com, Mark Campbell Productions

a national level. As president of Pratt Recycling, my team's primary responsibility is [sourcing] fiber for Pratt's six domestic 100 percent-recycled paper mills.

***RT*: How has the recycling industry, specifically the paper recycling industry, evolved since you first started?**

SS: During the time I've been in the industry, the commercial paper industry has always been robust. There has been a lot of investment in paper recycling, both to collect and to consume, and that continues to happen. We are seeing more recycled fiber mill startups and conversions, and we are also seeing big investments on the municipal collection side, with more households having access and more MRF operators investing in technology to clean up and sort material.

***RT*: What are some of the biggest challenges facing recyclers and industry trends you've seen developing?**

SS: The biggest challenge is and continues to be contamination in the recycled fiber stream, and the biggest trend I've seen is in automation. We are seeing third- and fourth-generation robotics and improvements in [artificial intelligence] and optical sorting technologies automating older MRFs and being used in new MRFs to dramatically reduce the number of employees on the line sorting.

***RT*: How have the relationships you've built in the industry set you and Pratt up for success?**

SS: The relationships Pratt has built in the industry, by and large, are based on paying on time, providing great service, being competitive to the market and standing by what we have said we would do—whether that is a handshake or a contract. Those four things may be the pillars for helping make the longer-term relationships successful.

At the end of the day, we are buying and selling a commodity, and anyone can do that. That is why the relationship is so important. Generally speaking, the price drives the transaction, but relationships are a very close second to that and, in some cases, can be more important than price depending on what the buyer and seller are looking for in the relationship. Quality, service and the history of the companies are also critical.

When markets are facing turmoil, being good at all these things is critical to keeping supply or providing support to



suppliers that need help.

It's also important we try to find some commonality in what individuals that both Pratt and the companies we are working with use to develop the relationship. It makes it more fun on a day-to-day basis to enjoy working with the company and person you are dealing with.

***RT*: As a 100 percent-recycled packaging company, Pratt seems to walk the walk when it comes to circularity and sustainability. How has the business been able to accomplish this?**

SS: This is driven by the executive leadership team in the company within all divisions and cannot be done without the logistics, mill, recycling, corrugated, converting and display divisions working together toward that one common goal.

***RT*: How has Pratt Recycling adapted to major events of the last several years?**

SS: I believe communication has been the key. We develop plans and then communicate well internally to execute the company goals that are then communicated to our employees and our customers.

***RT*: How did your involvement with ISRI and PSI begin?**

SS: I was introduced to ISRI [and] PSI through my former boss. I initially started as a member of the PSI specs committee, eventually becoming chair. I also was director-at-large and have since moved into the PSI leadership ranks.

***RT*: What are the benefits of being part of a group like PSI, and what do you say to folks considering joining?**

SS: One of the bigger benefits is the networking opportunities with other like-minded companies and people that are all working toward the same goals you are. There are many opportunities to interact and bounce ideas off each other.

***RT*: Are there any initiatives currently in the works at Pratt you're excited about?**

SS: We continue to build paper mills and box plants, with each one being a bit more automated than the next. It is exciting to have gone from the company we were in 2001 when I started with Pratt to the third-largest consumer of recovered fiber in North America today. Every day brings a new challenge. **RT**

Shawn State is the president of Pratt Recycling, a division of Conyers, Georgia-based paper and packaging company Pratt Industries. For more information, visit www.prattindustries.com.





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list with 1.4 million tons of recovered paper consumed, has started up one of its two announced coated recycled paperboard (CRB) mills, with the other slated to begin operations in 2025.

The company's $600 million K2 CRB machine in Kalamazoo, Michigan, started up in January 2022 and, by October 2023, had reached expected quality, cost improvements and volume commitments ahead of schedule, according to Graphic Packaging, leading to the earlier-than-anticipated shutdown of its K3 CRB machine—the company's longest-running—at the Kalamazoo site. The K2 machine has a reported annual production capacity of about 500,000 tons.

Graphic Packaging made waves in February with the announcement of another CRB machine—this time a $1 billion project in Waco, Texas.

"Our confidence in the long-term strength of the demand for renewable and recyclable fiber-based packaging is high," the company's President and CEO Mike Doss said in August.

Finally, Green Bay Packaging of Green Bay, Wisconsin, only jumped one spot on the list but reports a major increase in recovered paper consumption, going from 530,000 tons in 2021 to 750,000 tons this year with the March 2021 opening of its $500 million paper mill in Green Bay. That mill consumes OCC and mixed paper to produce 685,000 tons of containerboard annually, the company says.

"We have to be aware that there are economic cycles, and those [cycles] can have an impact on [the] packaging business—and business in general," Green Bay Packaging Vice President of Mill Operations Matt Szymanski said in July 2021, seemingly foreshadowing the crash that followed the e-commerce boom of 2020. "But we do feel that there is a sufficient level of demand here that is sustainable due to growth in e-commerce."

Domtar, a new entry among North America's 20 largest recovered paper consumers this year, consumed about 285,000 tons of OCC. In January, the company opened its first 100 percent-recycled mill in Kingsport, Tennessee, after a two-year, $350 million conversion project that makes the site home to what the company says is the second-largest recycled containerboard machine in North America. It is expected to produce 600,000 tons of recycled linerboard and corrugated medium while consuming 660,000 tons of OCC and mixed paper when it reaches its peak run rate.

"All our growth as an industry in containerboard is in recycled-content material," John Grinnell, vice president and general manager at Greif, said during the PPRC. "There's about 5 million annual tons of capacity that's come online within the last several years; to put that in perspective, that's 20 percent or so of total domestic consumption."

THE IMPACT OF EXPORT

It's worth noting, however, that recovered paper exports are down from a year ago, keeping more tons in North America.

During his presentation at the PPRC, Grinnell calculated, using figures from the Washington-based American Forest & Paper Association, that export demand is off 19 percent year to date while domestic consumption is off 7 percent, which he said adds up to 4.2 million tons. "But remember," he said, "it was a lot worse in December [2022] than it is today."

The Paper Stock Industries (PSI) chapter of the Washington-based Institute of Scrap Recycling Industries (ISRI), reports that U.S. recovered paper exports totaled 9.9 million metric tons the first nine months of this year, down about 17.5 percent from the same period in 2022 and nearly in line with Grinnell's figure.

Of the 10 leading destinations for U.S. recovered paper, nine of them report decreased imports, with Thailand being the only gainer, receiving about 1.7 million metric tons from January to September.

ENCOURAGING OUTLOOK

In several earnings reports from the larger recovered paper consumers, including IP, company executives say they feel more optimistic overall about the sector, offering hope that 2024 will provide better conditions than 2023 and healthy markets for recovered fiber in North America.

"Asia is the market that continues to lag a bit, but we're seeing recovery there as well, and so when you look at all that and look through the fourth quarter, we see strong order books all the way through the end of the year," Jay Royalty, senior vice president of containerboard and recycling at IP, said during the company's third-quarter earnings call. "We believe we've seen demand bottom, and the outlook is certainly more encouraging." RT

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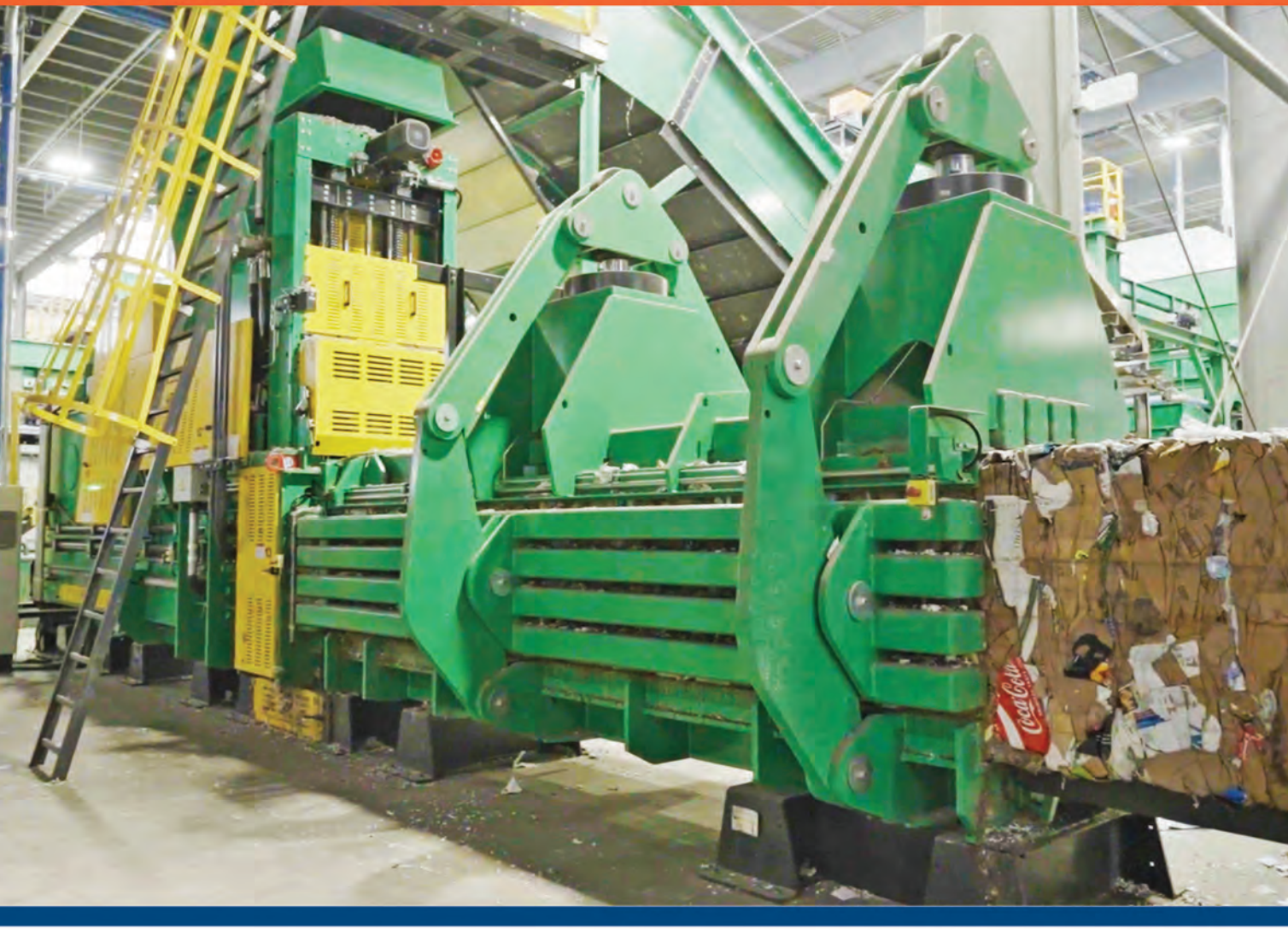
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