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Paper recycling industry remains strong

by MAURA KELLER

mkeller@americanrecycler.com

Paper recycling has long been a challenging segment of the recycling industry as consumer interest in recycling paper ebbs and flows, technologies evolve, production fluctuates and external issues, such as the recent pandemic, impacts the industry as a whole.

That said, Brian Hawkinson, executive director, Recovered Fiber at American Forest & Paper Association. (AF&PA), said paper recycling continues to be an environmental success story. As AF&PA's 2022 recycling rate data – released in early August – shows, nearly 68 percent (67.9 percent) of paper used in the U.S. was recycled in 2022, holding approximately stable to the 2021 rate.

“Additionally, 93.6 percent of cardboard boxes were recycled in 2022, an increase over 2021 that raised the 3 year recycling rate average for old corrugated containers (OCC) to 91.3 percent,” Hawkinson said.

However, paper recycling through the first half of 2023 is lagging in its performance during the same period in 2022. As Hawkinson pointed out, recovered fiber consumption in the U.S. is down 7 percent through June compared to the same period in 2022.

“That mirrors a decline in total domestic paper and paperboard production, which is down 10 percent through June compared to the same period in 2022,” he said. “Still, more than twice as much paper is recycled as is sent to landfills every year, and the industry recycles nearly 70 percent more paper today than we did in 1990. In fact, more than two-thirds of the paper used in the U.S. – nearly 50 million tons – is recycled each year and used to make new sustainable paper products that people use every day.”

According to Brent Bell, vice president of recycling at WM, paper recycling has seen a lot of investments in North America over the last few years and the recycling industry is seeing more capacity come online with these new paper mills.

“While box demand is down overall, the industry is prepared for the economy to pick back up and the industry has invested to make new recycled boxes here in North America,” Bell said.

Of course, the pandemic also significantly impacted the paper recycling industry, hitting it hard as a lot of recycling programs were deferred due to the driver storage, as well as restrictions regarding building and business access. Office workers, for example, simply weren't using (or recycling) vast amounts of paper as they had in the past.

However, as Bell pointed out, in 2021 through early 2022, there was an increase in box demand as working from home became the new norm.



Paper recycling continues to be an environmental success story.

“While we have seen prices increase slightly this year – box demand is down as the industry is seeing the “deboxing” impact from folks using current inventory,” Bell said.

Advancements & Challenges

While the paper recycling industry faced a myriad of issues during the pandemic, paper mills turned their attention to modifying their end products, which in turn affects the recycling industry.

As Hawkinson explained, the paper industry has seen broad improvements in processing technology. This has enabled paper mills to use a wider variety of recovered fiber in the manufacturing process, expanding the way for recycling systems to accept more materials in their recycling streams.

“A great example of this is poly-coated paper cups. More than one million residents of Chicago gained access to paper cup recycling this year, while cities like Memphis, Tennessee and communities across North and South Carolina also added paper cups to their acceptance lists for recyclable products,” Hawkinson said.

To help drive innovation even further, AF&PA developed the Design Guidance for Recyclability to help packaging manufacturers, designers and brands better understand how non-fiber elements, such as coatings and additives, impact the recyclability of paper-based packaging: This guidance can help to create and manufacture packaging that better meets recyclability goals. The organization has also seen AF&PA members make packaging products like paper padded mailers which can be recycled at paper mills throughout the country.

“More and more paper mills are using mixed paper as well as cardboard for feedstock, and when you look at a mixed paper bale – there is some strong fiber content in these bales today,” Bell said. “And as

more boxes are being delivered through residential and multi-family homes, it's important to keep the recycling rate for cardboard high. So, we want to make sure in the shift from retail/commercial to residential, that we don't lose any boxes to the landfill. At WM, we encourage all of our residential programs to use 96-gallon carts and break down cardboard boxes to fit more material in the recycling bin.”

One challenge facing the paper recycling industry that Hawkinson noted is the “one-size-fits-all” extended producer responsibility (EPR) policies that have been adopted in several states, and are under consideration in several others. These present challenges to effective and efficient paper recycling.

“Rather than imposing fees on manufacturers of highly recycled materials like paper, EPR policies should be applied as a solution for hazardous, hard-to-handle materials with low recycling rates,” Hawkinson said. “Ultimately, we are asking policymakers and influencers to focus on improving recycling for materials with low recovery rates instead of creating mandates and fees for paper producers that could direct capital away from investing in recycling infrastructure.”

For example, some states, like California, passed EPR legislation that creates an “off-ramp” for highly recycled materials like paper that will continue the market-based success of paper recycling while encouraging voluntary industry investment in recycling infrastructure.

“And while recycling rates can vary, the residential recovery rate for cardboard boxes is estimated to be approximately half the recovery rate from commercial and retail stores, making it critical that we continue to educate consumers on recycling best practices for cardboard boxes, so we can increase the quantity and

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Collaborative grant supports new recycling facility in Chicago



A new materials recovery facility in Chicago will be operated by Lakeshore Recycling Systems.

A new materials recovery facility (MRF) has opened in the city of Chicago, Illinois, with state-of-the-art equipment thanks to a collaborative grant from the Carton Council of North America and the Foodservice Packaging Institute (FPI). The opening of this facility, which will be operated by Lakeshore Recycling Systems (LRS), the city's recycling service provider for four of the six recycling zones, marks a significant milestone in enhancing recycling capabilities and promoting sustainable practices in the region.

This joint initiative comes in response to the growing demand for efficient recycling infrastructure. The new facility has been designed with industry-leading practices, advanced technologies, and a cutting-edge optical sorter to ensure the efficient sorting and processing of various recyclable materials. These materials include food packaging items such as paper cups, pizza boxes, food and beverage cartons, paper bags, polyethylene terephthalate (PET), polypropylene (PP) cups and aluminum foil food packaging. After entering the recycling system, these items are baled and primarily sent to recyclers located in the Great Lakes region where they transform the materials into new products, thus promoting the advancement of the circular economy.

"Collaboration is a cornerstone of the

Carton Council's strategy. We are proud to work with the Foodservice Packaging Institute and Lakeshore Recycling Systems, contributing to a more efficient infrastructure in the Chicago area," said Jason Pelz, vice president of recycling projects for the Carton Council. "When we partner with others who share our commitment to improving recycling, it's a win-win."

The facility's capabilities are optimized to handle the additional recyclable tons generated within the city and maximize the recovery of valuable resources, benefiting over one million residents in the Windy City and surrounding communities.

"This new facility will enable us to provide enhanced waste management services and maximize recycling efforts, benefiting the community we proudly serve," said John Larsen, chief operating officer at LRS.

To celebrate this significant achievement, LRS hosted a ribbon-cutting event to inaugurate the facility. The event was attended by representatives from LRS, the Foodservice Packaging Institute, the Carton Council, and the City of Chicago. The occasion served as a testament to the strong partnership between these organizations and their dedication to sustainable waste management practices.

Casella upgrades facility in Massachusetts

Casella Waste Systems, Inc., a regional solid waste, recycling and resource management services company, opened the doors of its newly renovated Charlestown, Massachusetts materials recovery facility (MRF). The facility upgrade is complete with state-of-the-art equipment for increased throughput, improved end-product quality, and enhanced safety.

The Charlestown MRF, owned and operated by Casella, is one of the largest recycling facilities in the country and accepts materials from many customers and communities throughout Massachusetts and the greater Boston area. Casella invested approximately \$20 million as part

of the upgrade at the recycling facility.

"Since opening our first recycling facility in 1977, there has been a significant amount of innovation, technology, and change and we are proud to remain a leader in bringing that innovation to the marketplace," said Casella Chairman and chief executive officer, John W. Casella.

The facility was previously converted to a single stream MRF in 2009 and has processed nearly three million tons of recyclables since then. The upgrades come on the heels of more than \$30 million in investments by Casella in its Resource Solutions operations over the past two years.

Kent County DPW invests in recycling education center

A slew of innovative technology upgrades and strategic investments are increasing the quality of recycling and reducing Kent County, Michigan's reliance on landfills.

Kent County's Recycling & Education Center, operated by the Kent County Department of Public Works (DPW) has undergone numerous improvements since it opened in 2010 that make recycling accessible and efficient for Kent County residents. The latest installation of robots that use AI to sort materials is the capstone to years of investments that help improve recycling and decrease costs.

"We set a bold goal to divert 90 percent of trash from landfills by 2030. The upgrades made in our Recycling & Education Center, as well as the upcoming Sustainable Business Park, are an essential part of reaching that goal," said Dar Baas, director of the DPW. "We have seen the harmful long-term impacts of landfilling, and the investments we make will help ensure we're protecting our land, air and water now and into the future."

The Recycling & Education Center is the primary facility for residential recyclables generated from homes in West Michigan and is responsible for processing more than 60 million pounds of recyclables per year. The materials are sorted and put back into the economy as feedstock for new products like cereal boxes, glass bottles, toys, packaging, clothing, park benches and more.

The installation of robots, installed with grant funding from the Michigan Department of Environment, Great Lakes and Energy (EGLE), has helped improve the quality, efficiency and safety at the Recycling & Education Center.

The robots are just the latest in a series of new technology, including the installation of a new optical sorter and eddy current separator, designed to extract specific materials from the recycling stream. The optical sorter reads different types of plastic as they move down a conveyor belt and sorts the materials based on their grade, leading to more accurate identification of valuable materials so they can be put to better use. The eddy current

separator captures nonferrous metals such as aluminum or copper.

In recent years, the DPW also installed equipment that sorts paper cartons and corrugated cardboard that allows for the recycling of cartons like empty creamer, soy and almond milk containers, juice boxes, milk cartons and boxed water.

The DPW worked hard to ensure equipment was installed or upgraded in a way that would not disrupt recycling service in the county.

Upgrades made to the facility have resulted in the county being positioned to sort more material and divert it from a landfill. The upgrades have also resulted in fewer people being needed to operate certain functions at the Recycling & Education Center leading to overall cost savings.

Despite these improvements, recent waste characterization studies show the Recycling and Education Center is only processing about 25 percent of the available recyclable material in Kent County. Due to limited access to curbside recycling and low participation rates, more than 75,000 tons per year of recyclable material ends up going in the trash and ending up at the waste-to-energy facility or an area landfill. The proposed Kent County Bioenergy Facility will use technology similar to the Recycling and Education Center to extract much of that recyclable material that's ending up in the trash.

On March 29, the state of Michigan enacted the new Materials Management Plan. The Plan requires counties to update their solid waste management to focus on sustainable materials management approaches, such as recycling and composting, instead of relying on just landfilling waste. Kent County will be required to map out how it plans to increase the diversion of waste from landfills. The Recycling and Education Center, waste-to-energy facility and proposed Kent County Bioenergy Facility position Kent County to lead the state in materials management and provide solutions for neighboring counties.

Illinois passes new law for statewide household paint recycling program

Homeowners and businesses throughout Illinois will soon be able to recycle their leftover paint due to legislation sponsored by State Senator Linda Holmes that establishes a program to dispose of household paint. The program was signed into law by the Illinois governor in July.

The Paint Stewardship Act creates a process for consumers to dispose of household paint in Illinois. No state resources are in place yet to deal with this waste. Under this law, manufacturers of architectural paint will create and submit a plan to the Illinois EPA to establish the program.

Under this program, manufacturers will pay a fee to the Illinois EPA to set up a paint collection site, service or

event, which will allow residents to drop off unused paint to specified locations free of charge. Those collection sites or events will be within a 15 mile radius for 90 percent of Illinois residents.

"Consumers will now have an opportunity to declutter their homes of old paint and feel confident that their waste is being recycled and disposed of in an environmentally sustainable way," Holmes said.

Similar programs in other states with paint stewardship laws include California, Minnesota, Colorado and New York. They have collected 62.6 million gallons of paint.

Senate Bill 836 was signed into law by Governor JB Pritzker and takes effect January 1, 2024.

Recology Ostrom Organics receives Organics Management Facility of the Year Award

Recology Ostrom Organics was recognized with the Organics Management Facility of the Year Award by the National Waste & Recycling Association.

The award recognizes Recology for leading the industry in diverting compostable materials from landfills, and inspiring other companies to follow suit. Recology pioneered curbside food scrap collection for composting in North America and owns and operates eight composting facilities on the West Coast.

Located in Northern California, Recology Ostrom Organics (ROO) has processed more than 136,000 tons of compostable material since November 2020. The facility also utilizes landfill gas from Recology's Ostrom Road Landfill to generate renewable energy and power all onsite electrical equipment and lighting.

ROO is a critical component of the processing capacity needed to support municipalities as they work to comply with SB 1383, a landmark environmental

measure requiring municipalities in the state to divert at least 75 percent of all compostable discards from landfills. At full build-out, ROO will accept 2,000 tons of compostable material per day.

More than 300 cities have implemented citywide curbside food scrap collection for composting since Recology and the city of San Francisco launched the movement in 1996. In January of this year, the City of Los Angeles made curbside food scraps collection mandatory for all properties and New York City followed suit in June.

ROO uses an aerated static pile processing technology with a mass bed configuration. The finished compost created at ROO is listed by the Organics Material Review Institute (OMRI) as approved for use on organic soils. Applying high-quality compost helps local farms grow more healthy food and it also saves water.



Recology Ostrom Organics has processed more than 136,000 tons of compostable material since November 2020.

SWACO, Central Ohio communities bolster sustainability

Seventy-six percent of the material sent by homes and businesses to the Franklin County Sanitary Landfill every year has the potential to be reused, recycled or composted. In an ongoing effort to bolster the region's sustainability by diverting more waste away from the landfill, the Solid Waste Association of Central Ohio (SWACO) announced new collaborations with the cities of Columbus and Dublin and the Village of Brice to capture more food waste and household recyclables.

The partnerships include comprehensive food waste reduction initiatives, including the establishment of convenient food waste drop-off sites for residents to use; implementing Save More Than Food, a public education campaign to raise awareness about responsible food disposal practices; and expanding recycling infrastructure.

"Collaboration is at the heart of our mission, and these joint efforts with the cities of Columbus, Dublin and the Village of Brice exemplify the impact we can achieve by working together," said Joe Lombardi, SWACO's executive director. "Through our combined dedication to reducing food waste and enhancing recycling infrastructure, we are paving the way for a more sustainable and environmentally conscious central Ohio."

City of Columbus and Dublin: Food Waste Drop Off Sites

As part of the 2023 Community Waste Reduction Grant program, SWACO awarded the City of Columbus \$35,000 to establish three new food waste drop-off sites.

These locations accept items such as meat, fish and small bones, dairy products, including eggs, pasta, fruits and veggies, paper towels and soiled napkins. For a complete list of what's

accepted, visit: <https://www.columbus.gov/foodwaste/>.

"We promised more refuse collection services to support our residents' desire for environmentally conscious food waste disposal, and the launch of our three drop-off locations is a continuation of those efforts," said Mayor Andrew J. Ginther. "The city's partnership with SWACO advances our collective commitment to reduce landfilled waste and greenhouse gas emissions, which helps to ensure a healthier, cleaner climate for everyone."

With the opening of these Columbus locations, 13 central Ohio communities now host a food waste drop-off site, including the city of Dublin, where a program came online in 2020 after receiving \$6,759 in financial support from SWACO.

Since its launch, Dublin's food waste drop-off program has diverted 145 tons of material and now, the city is partnering with SWACO to deliver educational information from Save More Than Food to residents' mailboxes and social media feeds in an effort to encourage more Dublin residents to sign up and participate in the already successful program.

The Village of Brice: Expanding Recycling Infrastructure through Recycling Cart Program

SWACO is dedicated to supporting increased recycling across central Ohio, including its smaller communities. As part of this commitment, SWACO is working alongside the Village of Brice to help purchase 65 gallon wheeled recycling carts for its residents. Carts allow Brice residents to upgrade from small, handheld bins and are easier to move to the curb, hold more recycling and reduce litter because of their lids. SWACO's Community Cart Grant program makes

the purchase of new carts economically appealing for a community because they typically receive a 50 percent or greater reduction in the price of the carts.

Brice is the eighth central Ohio community to participate in SWACO's Recycling Cart Grant Program. Since 2019, SWACO has provided carts to more than 45,000 households in Bexley,

Blendon Township, Gahanna, Pleasant Township, Reynoldsburg, Westerville, and Whitehall.

Residents and businesses in these partner communities are encouraged to actively participate in food waste reduction initiatives and embrace responsible recycling practices to contribute to the success of these impactful programs.

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Paper Recycling Industry

■ Continued from Page 1

improve the quality of paper in the recycling stream,” Hawkinson said. “When it comes to cardboard boxes, the process is simple: Empty your box. Break it down flat. And put it in your recycling bin for collection.”

On the Horizon

Paper recycling is consistently high and continues to be an environmental success story.

As the paper recycling industry continues to recover, Bell believes that paper will benefit from the concerns people have over plastic packaging. “Today, we are seeing some major retailers shift from plastic mailers to kraft or paper mailers that are more recycling friendly,” Bell said.

Hawkinson adds that the industry’s continued and voluntary investments are part of the reason why the paper recycling industry continues to be successful. “We have completed or announced nearly \$7 billion in manufacturing investments, during 2019 to 2025, that will use more than 9 million tons of recovered fiber,” Hawkinson said. “Those investments have already paid dividends. In 2022, approximately 80 percent of U.S. paper mills use some recycled paper fiber to make renewable products like packaging,

office paper, newspaper, toilet paper, napkins and paper towels.”

American Forest & Paper Association also continues working to meet its “Better Practices, Better Planet 2030” sustainability goals, which includes increasing the utilization of secondary materials, like recovered paper, to 50 percent by 2030 and increasing the percentage of products that are recyclable and compostable.

“To do this, we will continue to work with policy influencers to encourage them to support market-based solutions to improve existing paper and paper packaging recycling programs,” Hawkinson said. “Ultimately, we continue to strive to produce more sustainable paper products, increase the availability of and access to community recycling, and educate consumers about both the importance and ease of paper recycling.”

American Recycler
NewsVoice of Salvage, Waste and Recycling
877-777-0043 | Fax 419-931-0740

Owner, Publisher and Editor

ESTHER G. FOURNIER
news@AmericanRecycler.com

Print and Digital Production

JAN MEYER
jan@AmericanRecycler.com

Marketing Representatives

MARY M. THORNTON
maryt@AmericanRecycler.com

JAN MEYER
jan@AmericanRecycler.com

Circulation Manager

DONNA L. MCMANUS
donna@AmericanRecycler.com

Writers and Contributors

MAURA KELLER
mkeller@AmericanRecycler.com

MARY M. THORNTON
maryt@AmericanRecycler.com

Production Offices

1789 Indian Wood Circle, Ste 250
Maumee, OH 43537
877-777-0043 | fax 419-931-0740
AmericanRecycler.com

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Meridian Waste invests in life-saving measures at all operating facilities

Meridian Waste, an integrated, non-hazardous solid waste services company, has provided financial and employee training with \$15,700 and 113 hours, respectively, to upgrade and protect its team members with the installation and personnel training of automated external defibrillator (AED) equipment and cardiopulmonary resuscitation (CPR) first aid training in all company operating locations. Meridian Waste places great importance on the safety and health of the company’s most vital assets, its people.

AEDs are used for individuals experiencing sudden cardiac arrest. The sophisticated, easy-to-use medical device can analyze the heart’s rhythm and, if necessary, deliver an electrical shock, or defibrillation, to help the heart re-establish an effective rhythm.

To ensure the success of the AED installation program, Meridian Waste has implemented, paid for, and authorized



AED equipment installed at the Meridian Waste headquarters in Charlotte, North Carolina.

staff training time which was provided by The National CPR Foundation (NCPRF). Upon completion, participants received a two year certification card, wallet identification card, and a key chain card

showing proof of certification. NCPRF focuses on life-skill techniques through the development of life-training curricular modules. According to the Foundation, its aim is to provide the best certification experience possible while also providing the best user-friendly tools to promote online education.

“Investing in superior equipment and training to help save the lives of our team members in the event of an emergency is the best utilization of training and funds possible,” said Walter “Wally” Hall, Jr., chief executive officer of Meridian Waste. “Our team members are strong stewards of the environment and serve as allies in providing clean and healthy communities. I am hopeful that we will never have to use the AED equipment and CPR first aid, however, experience has taught me that the best defense is a strong offense. We encourage all employees to be alert, be prepared, and be ready to take action.”

Republic Services reports revenue growth

Republic Services, Inc. reported net income of \$427.4 million, or \$1.35 per diluted share, for the three months ended June 30, 2023, versus \$371.9 million, or \$1.17 per diluted share, for the comparable 2022 period. Excluding certain expenses and other items, on an adjusted basis, net income for the three months ended June 30, 2023 was \$446.7 million, or \$1.41 per diluted share, versus \$418.4 million, or \$1.32 per diluted share, for the comparable 2022 period.

“During the second quarter, we delivered double-digit growth in EBITDA and expanded margins by pricing ahead of cost inflation and growing our business organically,” said Jon Vander Ark, president and chief executive officer. “Growth continues to be broad-based, with strong results in our Recycling and Solid Waste and Environmental Solutions businesses. As a result of our performance and outlook for the remainder of the year, we are raising our full-year financial guidance.”

Second-Quarter 2023 Highlights:

- Total revenue growth of 9.1 percent includes 4.7 percent of organic growth and 4.4 percent of growth from acquisitions.
- Core price on total revenue increased revenue by 7.3 percent. Core price on related business revenue increased revenue by 8.8 percent, which consisted of 11.0 percent in the open market and 5.3 percent in the restricted portion of the business.
- Revenue growth from average yield on total revenue was 5.9 percent, and volume increased revenue by 0.4 percent. Revenue growth from average yield on related business revenue was 7.1 percent, and volume increased related business revenue by 0.5 percent.
- Net income was \$427.4 million, or 11.5 percent of revenue.
- EPS was \$1.35 per share, an increase of 15.4 percent over the prior year.
- Adjusted EPS, a non-GAAP measure, was \$1.41 per share, an increase of 6.8 percent over the prior year.
- Adjusted EBITDA, a non-GAAP measure, was \$1,116.1 million and adjusted EBITDA margin, a non-GAAP measure, was 30.0 percent of revenue. Adjusted EBITDA margin was 30.8 percent in the recycling and solid waste business and 22.5 percent in the environmental solutions business.
- Year-to-date cash invested in acquisitions was \$926.9 million, all of which was in the recycling and solid waste business.
- Year-to-date cash returned to shareholders through dividends was \$313.0 million.
- The Company's average recycled commodity price per ton sold during the second quarter was \$119. This represents an increase of \$14 per ton from the first quarter of 2023 and a decrease of \$99 per ton over the prior year.

NextCycle Michigan selects 14 teams for accelerator program

NextCycle Michigan has selected 14 teams to participate in its accelerator tracks focused on improving recycling supply chains (RSC) and supporting intergovernmental initiatives and public-private partnerships (I2P3).

Through participation in NextCycle Michigan's accelerator, teams will build relationships with new networks while receiving technical support, financial resources, and capacity building for their recycling, recovery, and reuse initiatives.

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) supports the NextCycle Michigan initiative, focused on improving Michigan's recycling and waste recovery systems through collaboration and capacity building. The teams selected proposed innovative ideas to address gaps and opportunities highlighted in a 2021 NextCycle Michigan Gap Analysis. The analysis identified opportunities where NextCycle Michigan can boost innovative solutions for material management, helping to reduce greenhouse gas emissions and further Michigan on its path to carbon neutrality by 2050 through the MI Healthy Climate Plan.

"Through NextCycle Michigan, we're supporting local businesses, organizations, and governments seeking to improve Michigan's sustainable materials management activities," said Matt Flechter, recycling market development specialist for EGLE. "We're engaging with minority-owned organizations and startup entrepreneurs to support building

diversity, equity, and inclusion in Michigan's circular economy."

The I2P3 Accelerator Track focuses on public-private partnerships working to implement recycling and composting solutions that create resilient and adaptable communities. The selected teams are:

- Calhoun County – Plan to move recycling operations to a location where it can implement baling and expand its comprehensive recycling center.
- Crawford County – Will aim to implement a countywide recycling program.
- Dickinson Conservation District – Will develop plans for curbside recycling service in densely populated areas and drop-off locations in rural areas.
- City of Eaton Rapids, Eaton Rapids Township, and Hamlin Township – Will develop plans for a new recycling center for residential recyclables as well as bulky and hard-to-recycle materials.
- Isabella County Material Recovery Facility – Plan to overhaul and upgrade its existing materials recovery facility.
- West Michigan Environmental Action Council Education Foundation – Will look at improving residential recycling in Muskegon County through program development, promotion, and sustainable partnerships and funding.
- Western Upper Peninsula Planning and Development Region – Will create a community composting pilot to supply local farmers with compost.

The RSC Accelerator Track centers around projects that establish, improve, or expand supply chains related to collection, processing, or end markets for recyclable material in Michigan. Selected teams are:

- Kadeya – Seeking to offer the world's first closed-loop beverage vending machine where customers receive reusable bottles of local water and return them to be sterilized and reused.
- Latrenae' Collection – Develop a business plan and connection with investors for its luxury, upcycled handbag for high heels.
- Mission LLC's Hero Project – Aiming to build an e-waste system for cannabis vape pens through design, rebates, branding, communication, and sorting.
- Perfect Circle Recycling – Seeking to expand its recycling capacity and improve its software to allow customers to explore their waste diversion data.
- reUser – Plan to expand its software offerings for tracking reusable takeout containers and establish new corporate and institutional partners.
- SCRAP Creative Reuse – Aiming to grow partnerships and the capacity of its craft reuse program to service and provide education to low-income and historically underserved neighborhoods in Washtenaw County.
- Sipzee – Planning to increase bottle recycling through a mobile app which pairs recyclers with drivers to return their cans for a portion of the deposit.

The 14 teams will join a NextCycle Michigan network of 59 alumni teams. These projects were selected based on the potential to address a waste material stream as identified by the Michigan Gap Analysis, center equity in the solutions being implemented, leverage collaboration and partnerships, and other core metrics developed by the selection panel of industry experts.

During the next eight months, NextCycle Michigan will support these new teams through the accelerator program to prepare teams for a fall showcase event where each will deliver a pitch to stakeholders, NextCycle partners, and investors. Teams will receive:

- Individualized project plan development and support.
- Access to business, industry and investment experts.
- Direct coaching support.
- Matchmaking with partners and funders.
- Workshops and networking events.
- Private and public funding opportunities.

Past teams have benefited from state funding and private investment after participating in NextCycle Michigan. Since 2018, an estimated \$690 million has been invested in growing Michigan's circular economy. In addition to supporting investment in initiatives, NextCycle Michigan has a variety of pathways to advance recycling, recovery, and reuse in the state through its accelerator program, data, and partner connections.

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RUBBER

Bridgestone Americas tire plant earns International Sustainability and Carbon Certification Plus recognition



The Bridgestone Americas (Bridgestone) Wilson, North Carolina tire manufacturing facility has earned the International Sustainability and Carbon Certification (ISCC) PLUS recognition.

Bridgestone Americas (Bridgestone) announced its Wilson, North Carolina passenger/light truck tire manufacturing facility has earned the International Sustainability and Carbon Certification (ISCC) PLUS recognition for its transparency and traceability of sustainable raw materials including bio, bio-circular and circular-based material to replace synthetic rubber in its transition to a circular economy.

“This recognition speaks to the commitment, dedication and diligence of each of our Wilson teammates who are committed to safe, sustainable operations that ultimately provide our customers with high quality tires,” said Barry Owens, senior vice president, Bridgestone Americas Manufacturing Group.

The Wilson passenger tire

manufacturing facility has been a leader in tire manufacturing innovation throughout its 49 years of operations. The Wilson tire plant manufactures passenger tires, light truck radial tires and original equipment tires. The Wilson plant led production of the new Bridgestone Turanza EV tire; Bridgestone’s first replacement tire designed specifically for today’s top-selling electric vehicles. In 2020, the Wilson plant was also recognized for its effective safety and health management systems and maintaining low injury and illness rates by the North Carolina Department of Labor. The plant plays an active role in the Wilson community, contributing to the United Way of Wilson County’s campaign, Wilson Education Partnership and the American Red Cross.

The Wilson tire plant’s ISCC PLUS certification demonstrates Bridgestone’s progress toward sustainable manufacturing, which is an essential element of the company’s 2050 sustainability commitments – to achieve carbon neutrality and tires made with 100 percent renewable materials. Bridgestone also continues to advance its R&D initiative aimed at diversifying the world’s natural rubber supply by commercializing use of guayule natural rubber in tires by 2030.

The ISCC PLUS certification of the Wilson passenger tire manufacturing facility supports the “Ecology” and “Energy” values of the Bridgestone E8 Commitment, which establishes eight values starting with the letter “E” to solidify Bridgestone’s commitment to a more sustainable world.

PAPER

2022 U.S. paper industry hits high recycling rate

The American Forest & Paper Association (AF&PA) announced that nearly 68 percent of paper consumed in the U.S. (67.9 percent) was recycled in 2022.

The paper recycling rate held approximately steady to the 2021 rate and has remained consistently high. In fact, the paper recycling rate has met or exceeded 63 percent each year since 2009.

The paper recycling industry first voluntarily set a goal to help improve paper recycling back in the 1990s. The recycling rate has more than doubled since that time.

In 2022, the recycling rate for old corrugated containers (OCC), also known as cardboard, was 93.6 percent, an increase over last year’s rate. Meanwhile, the 3-year average (2020-2022) for OCC was 91.3 percent.

“Paper and cardboard continue to be some of the most-recycled material in the U.S.,” said AF&PA president and chief executive officer Heidi Brock. “Paper recycling is also one of the best examples of how we, as a society, are working to respect our environment and contribute to a circular economy.”

The paper industry has announced nearly \$7 billion in manufacturing investments from 2019-2025 that will use more than 9 million tons of recovered fiber.

“Paper recycling is a success story, and our industry’s commitment continues,” Brock said. “We’re working to use even more recycled paper in manufacturing and set a goal to increase the use of secondary materials like recycled paper in new paper products to 50 percent by 2030. These recycled paper products are a key component to our circular value chain.”

The paper industry also has a real ownership stake in the recycling system. AF&PA members own more than 100 materials recovery facilities nationwide. They are continuously working to innovate and improve technology.

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Scrap tire grants available in Michigan

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) will make available grants to promote and support the cleanup and reuse of scrap tires in Michigan.

Scrap tires pose a fire risk and a human health risk as mosquito breeding grounds. Through grants, scrap tires can be processed and used in paving products for roads, manufactured products, and energy production.

The Scrap Tire Cleanup Grant is available for property owners to clean up old or abandoned scrap tire piles. EGLE will give priority to collection sites where tires were accumulated prior to January 1, 1991, as well as collection sites that pose an imminent threat to public health, safety, welfare, or the environment. Local units of government and nonprofit



organizations are also eligible for funding for cleanup days and roadside cleanup grants.

Scrap Tire Market Development Grants are available to fund up to 50 percent of total eligible costs for projects that demonstrate new or increased uses of scrap tires in manufactured products or paving projects. EGLE will prioritize proposals based on the amount of scrap tire material being used in developing the project or product, demonstration

of a new use of scrap tire material, and demonstration of a viable market for a proposed product.

To apply for a grant, visit the Scrap Tire Website and select the appropriate link under “Grant Information,” or contact us at EGLE-ScrapTire@Michigan.gov.

EGLE will accept Scrap Tire Cleanup and Market Development Grant Applications with all supporting documentation received on or before September 29, 2023.

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METALS

June 2023 crude steel production decreases

World crude steel production for the 63 countries reporting to the World Steel Association (worldsteel) was 158.8 million tonnes (Mt) in June 2023, a 0.1 percent decrease compared to June 2022.

Crude steel production by region

Africa produced 1.3 Mt in June 2023, up 11.5 percent on June 2022. Asia and Oceania produced 119.7 Mt, up 0.8 percent. The EU produced 10.6 Mt, down 11.1 percent. Europe, Other produced 3.7 Mt, down 1.8 percent. The Middle East produced 4.2 Mt, up 9.4 percent. North America produced 9.2 Mt, down 0.5 percent. Russia & other CIS + Ukraine produced 6.8 Mt, up 5.2 percent. South

America produced 3.3 Mt, down 12.4 percent.

Top 10 steel-producing countries

China produced 91.1 Mt in June 2023, up 0.4 percent on June 2022. India produced 11.2 Mt, up 12.9 percent. Japan produced 7.3 Mt, down 1.7 percent. The U.S. produced 6.8 Mt, up 0.5 percent. Russia is estimated to have produced 5.8 Mt, up 3.8 percent. South Korea produced 5.5 Mt, down 0.9 percent. Germany produced 2.9 Mt, down 8.4 percent. Iran produced 3.2 Mt, up 17.4 percent. Brazil produced 2.6 Mt, down 12.5 percent. Turkey produced 2.9 Mt, down 1.5 percent.

Top 10 steel-producing countries				
	July 2023 (Mt)	% change July 23/22	Jan-July 2023 (Mt)	% change Jan-July 23/22
Africa	1.4	26.1	9.0	7.0
Asia and Oceania	119.9	9.1	828.4	1.7
EU (27)	10.3	-7.1	76.7	-10.3
Europe, Other	3.6	5.1	23.8	-11.7
Middle East	3.1	-3.9	26.2	2.3
North America	9.4	-1.2	64.1	-3.5
Russia & other CIS + Ukraine	7.4	9.3	51.2	-0.8
South America	3.4	-8.4	23.7	-7.4
Total 63 countries	158.5	6.6	1,103.2	-0.1

Estimated Ranking of top 10 producing countries is based on year to date aggregate.

Sims Metal acquires Baltimore Scrap Corp.

Sims Metal, a leader in metal recycling, announced the company has agreed to acquire the assets of U.S.-based metal recycler, Baltimore Scrap Corp (BSC) and its affiliated entities. The acquisition is anticipated to close in October 2023 subject to the satisfaction, or waiver, of customary closing conditions, including required regulatory approvals.

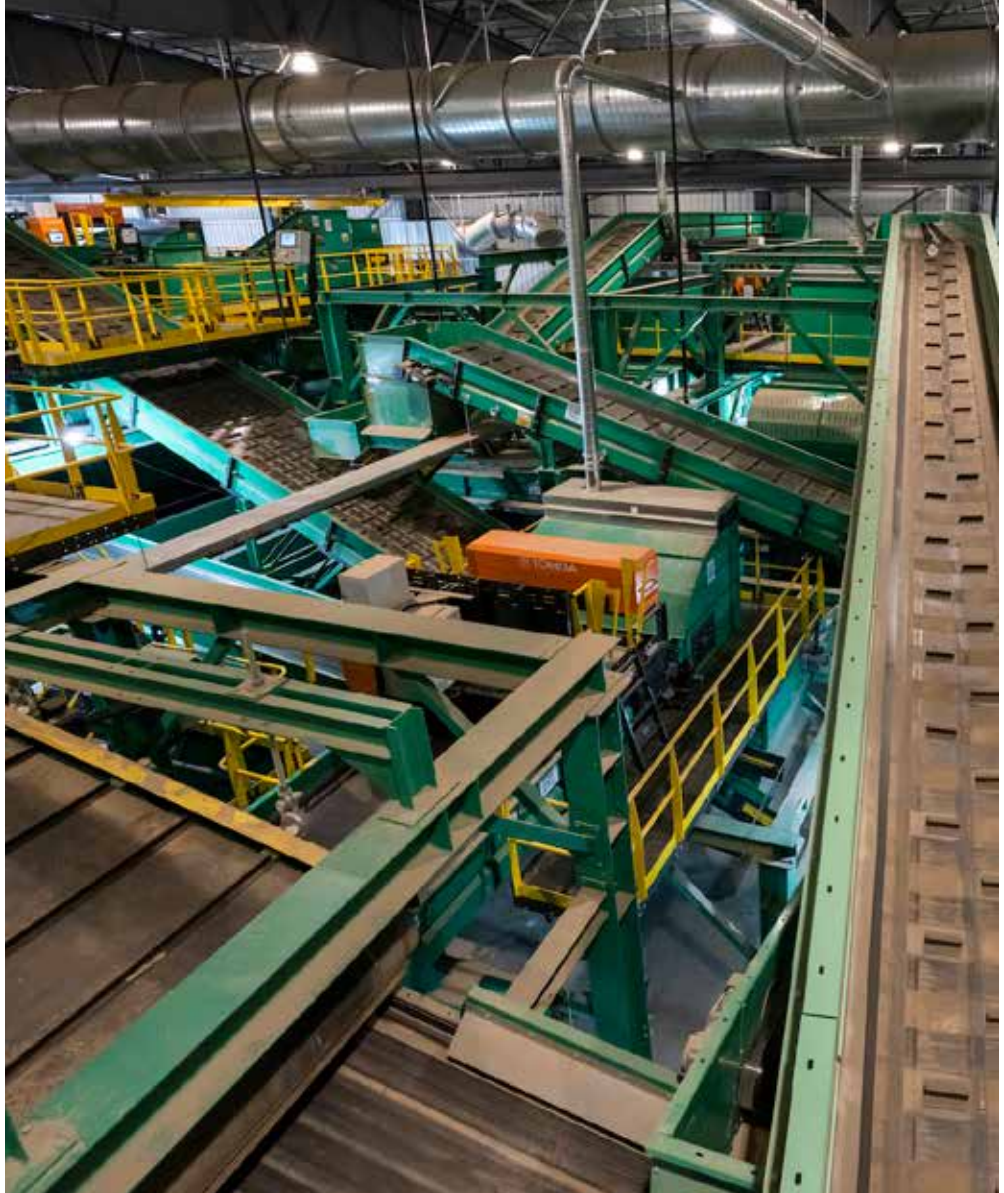
BSC is one of the largest metal recyclers in the American Northeast with 17 facilities across five states – Maryland, Virginia, Pennsylvania, New York, and New Jersey – with sales volumes of approximately 600,000 tonnes per annum. BSC’s operations include four shredders and extensive rail, barge and port infrastructure, and the business is well-positioned with attractive proximity to both growing domestic demand markets and export.

Total consideration for the acquisition is \$177 million, plus working capital and

other adjustments to be determined at closing. The transaction implies an EV/EBITDA multiple of 5.4x on a three year trailing average, pre-synergies basis. On an equivalent post-synergies basis, the EV/EBITDA multiple is forecasted to reduce to 4.2x.

“Baltimore Scrap Corp is a company we have admired for many years. They have a strong management team who has built an excellent business over many years,” said Alistair Field, chief executive officer and managing director of Sims Limited. “This acquisition is a highly complementary fit with our strategy to expand the metal recycling business in North America and increase our diversity of sales channels to growing U.S. domestic demand for ferrous and nonferrous scrap metal. I welcome the Baltimore Scrap Corp team and their group of affiliates to the Sims family.”

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METALS

Steel imports up 20.3 percent

Based on preliminary Census Bureau data, the American Iron and Steel Institute (AISI) reported that the U.S. imported a total of 2,791,000 net tons (NT) of steel in June 2023, including 1,991,000 net tons (NT) of finished steel (up 20.3 percent and 6.4 percent, respectively, vs. May 2023). Total and finished steel imports are down 10.7 percent and 14.9 percent, respectively, year-to-date vs. 2022. Over the 12-month period July 2022 to June 2023, total and finished steel imports are down 13.5 percent and 9.3 percent, respectively, vs. the prior 12-month period. Finished steel import market share was an estimated 23 percent in June and is estimated at 23 percent over the first six months of 2023.

Key steel products with a significant import increase in June compared to May are reinforcing bars (up 172 percent), ingots and billets and slabs (up 79 percent), heavy structural shapes (up 63 percent), hot rolled sheets (up 45 percent)

and line pipe (up 34 percent). Products with a significant increase in imports over the 12-month period July 2022 to June 2023 compared to the previous 12-month period include line pipe (up 36 percent), oil country goods (up 31 percent), cut lengths plates (up 10 percent) and standard pipe (up 10 percent).

In June, the largest suppliers were Canada (628,000 NT, no change vs. May), Brazil (419,000 NT, up 75 percent), Mexico (417,000 NT, up 48 percent), South Korea (375,000 NT, up 71 percent) and China (114,000 NT, up 149 percent). Over the 12-month period July 2022 to June 2023, the largest suppliers were Canada (6,923,000 NT, down 1 percent compared to the previous 12-months), Mexico (4,673,000 NT, down 17 percent), Brazil (3,090,000 NT, down 8 percent), South Korea (2,649,000 NT, down 9 percent) and Japan (1,278,000 NT, up 13 percent).

U.S. Imports of Steel Mill Products by Country of Origin (thousands of net tons)									
COUNTRY	JUNE 2023 PRELIM	MAY 2023 FINAL	% VAR. JUNE VS. MAY	YTD 2023 (6 MON.)	YTD 2022 (6 MON.)	% VAR. 2023 VS. 2022	JULY 2022 TO JUNE 2023	JULY 2021 TO JUNE 2022	% VAR.
Canada	628	628	0.1%	3,641	3,578	1.8%	6,923	7,021	-1.4%
Mexico	417	282	47.7%	2,325	2,954	-21.3%	4,673	5,610	-16.7%
Brazil	419	239	75.0%	2,077	1,555	33.5%	3,090	3,347	-7.7%
South Korea	375	219	70.8%	1,313	1,481	-11.3%	2,649	2,899	-8.6%
Japan	82	89	-7.7%	607	589	3.0%	1,278	1,127	13.4%
Germany	54	103	-47.5%	530	542	-2.1%	1,115	1,240	-10.1%
Taiwan	30	42	-28.6%	357	582	-38.7%	812	1,110	-26.9%
China	114	46	148.5%	388	333	16.4%	706	618	14.2%
Turkey	43	27	55.9%	203	541	-62.5%	662	1,132	-41.5%
Vietnam	42	22	91.6%	254	609	-58.3%	581	1,312	-55.7%
Netherlands	34	63	-46.7%	229	270	-15.2%	553	617	-10.3%
Italy	17	38	-54.9%	260	197	32.2%	515	332	55.3%
India	58	51	13.7%	223	417	-46.6%	490	721	-32.1%
Algeria	104	8	1213.8%	326	358	-9.0%	477	611	-21.9%
Romania	38	42	-8.3%	224	259	13.4%	449	455	-1.4%
All Other	338	422	-20.1%	2,050	2,529	-18.9%	4,089	5,439	-24.8%
Total	2,791	2,320	20.3%	15,004	16,792	-10.7%	29,060	33,591	-13.5%
memo EU-27	243	409	-40.5%	2,084	2,113	-1.4%	4,381	4,147	5.6%

Schnitzer reports strong market

Schnitzer Steel Industries, Inc. reported results for its third quarter of fiscal 2023 ended May 31, 2023.

Stronger demand for recycled metals from improved global steel demand and inventory restocking led to higher net average selling prices and an expansion of metal spreads in the quarter. Metal margins also benefited from shipments contracted before market prices began to soften in the second half of the quarter. Supply flows improved seasonally but remained tighter than a year ago.

Average net selling prices for ferrous and nonferrous products increased sequentially 13 percent and 2 percent, respectively. Ferrous sales volumes decreased sequentially by 8 percent compared to the prior quarter, which had benefited from a drawdown of inventories. Nonferrous sales volumes were up 26 percent sequentially, driven by stronger nonferrous flows and higher production and recovery from the Company's advanced nonferrous processing technologies. Sales volumes for finished steel products increased 30 percent, benefiting

from seasonally stronger demand for finished steel. Rolling mill utilization reached 97 percent in the quarter. Finished steel average net selling prices were lower sequentially by 2 percent.

Commenting on the company's third quarter results, Tamara Lundgren, chairman and chief executive officer, said, "Our financial and operating performance this quarter reflects stronger market conditions than we experienced earlier in the fiscal year, improved operating efficiencies from our productivity initiatives, and benefits from the advanced metal recovery technology systems which have been commissioned to date."

Lundgren continued, "While the near-term economic environment is showing some signs of slowdown, the long-term structural demand for recycled metals remains positive, supported by the increased focus on decarbonization, the transition to low-carbon technologies, and the anticipated demand associated with the Infrastructure Investment and Jobs Act and the Inflation Reduction Act, including Buy Clean provisions."

Republic Steel to idle steelmaking operations in Ohio and New York

Grupo Simec, an international producer of special bar quality (SBQ) steel, steel wire, rebar and commercial and structural steel long products, will indefinitely idle steelmaking operations at its Republic Steel mills in Canton, Ohio, and Lackawanna, New York.

During the idling, Republic Steel's U.S. customers will be served via Grupo Simec's state-of-the-art steel mill in Tlaxcala, Mexico. U.S. customers will experience no interruption in service. As a result of the consolidation, about 500 Republic Steel employees will be furloughed indefinitely.

According to Jaime Vigil, Republic Steel board member and executive advisor, Grupo Simec exhausted every additional potential option besides idling these two operations.

"We're facing an extremely challenging SBQ market in the U.S., with competitive market pricing and decreased demand," said Vigil. "At the same time, we've had to deal with increasing input costs on all raw materials, consumables, and labor, all as a result of the inflationary environment in the U.S. over the past year."

Vigil said there was hope that inflationary pressures would ease, and that Republic Steel would experience a bump in business following the passages of the Infrastructure Bill in 2021 and the Inflation Reduction Act in 2022.

Unfortunately, neither came to fruition in a timely manner.

Grupo Simec and Republic Steel are the only producers of leaded steel in North America and have been committed to doing so in an environmentally responsible manner. In the U.S., for instance, the company took many steps over the past several years to remain compliant with all environmental regulations, particularly the National Ambient Air Quality Standard for leaded steel production. During that time, the company invested approximately \$10 million in its Canton facility to maintain compliance with existing regulations and to respond to the ever-changing obligations imposed upon it by local, state, and federal environmental regulators.

Although Republic Steel has, for the past two years, remained in strict compliance with the National Ambient Air Quality Standards for the production of leaded steel, ensuring future environmental compliance while producing steel in facilities that are up to 125 years old proved to be too challenging. As a result, Grupo Simec felt it would be most environmentally responsible to do so at its new, state-of-the-art mill in Tlaxcala.

Republic Steel was acquired by Grupo Simec in 2005. Simec is one of the largest producers of SBQ in North America and a top producer of commercial and structural steel long products in Mexico.



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AUTOMOTIVE

Recycled Honda uniforms find new utility in vehicles

Honda is advancing a recycling initiative that takes uniforms worn by associates at its U.S. manufacturing



and R&D facilities and transforms them into sound-absorbing insulation for use in Honda and Acura automobiles. This program diverts approximately 45,000 pounds of uniforms from reaching landfills each month as Honda works toward its commitment to use 100 percent sustainable materials in its products in the future.

Honda has established a global “Triple Action to Zero” approach, with the goal of achieving carbon neutrality for all products and corporate activities, use of 100 percent clean energy and resource circulation (100 percent sustainable materials), by 2050. Achieving that goal – which targets zero environmental impact – will require innovative solutions, including how Honda sources materials for new products by recycling and reusing material from end-of-life vehicles and Honda operations.

“To achieve our Triple Zero goal of 100 percent sustainable material use, we need to take every possible opportunity to recycle materials at end of life for reuse in our products, thereby minimizing our utilization of virgin materials,” said Negar Gilsinger, manager of

resource circulation for American Honda Motor Co., Inc. “By maximizing end-of-life material recycling, we are giving our uniforms a second life in Honda and Acura vehicles.”

The Honda uniform recycling program leverages cross-industry collaboration between Honda and its uniform suppliers Aramark and Cintas Corporation, as well as insulation supplier UGN Automotive and textile recycler Leigh Fibers. Uniforms from Honda production and R&D facilities in Alabama, Indiana, North Carolina and Ohio are recycled and reused in five different insulator parts on all nine Honda and four Acura models made in North America. In the future, Honda plans to expand the uniform recycling program to other facilities in North America.

More than 380,000 pounds of uniforms have been recycled since the program launched at the end of 2021. The uniforms Honda associates wear have always been an important part of the company’s culture and success, symbolizing Honda’s “One Team” approach, which promotes collaboration and the understanding that the ideas of all associates are valued.

Transforming Uniforms into Insulation

Honda associate uniforms that are cleaned by uniform suppliers – Aramark, at Honda Indiana and Ohio facilities, and Cintas Corporation, at Alabama and North Carolina facilities – are evaluated

after washing. If the uniforms are undamaged, they are sent back to associates to wear. When uniforms are designated for reuse in Honda and Acura vehicles, they are baled and sent to Leigh Fibers, which specializes in reprocessing and custom-blending fiber-based materials.

At Leigh Fibers’ facility, the uniforms are shredded into material that meets the required fiber grade for use as vehicle insulators. Zippers and buttons from the uniforms are first extracted and collected so that no metal or plastic goes through the shredding process. Then the material gets blended into mixed fibers and tested to ensure the fiber material meets the fiber length requirements. The newly reprocessed fibers are then packaged and delivered to insulation supplier UGN.

UGN blends, consolidates and trims the fibers into material that is molded into insulation and returned to Honda auto manufacturing plants for new vehicle production. Typically, UGN creates insulation from post-industrial fibers, which are sourced from textile companies, and polyester sourced from recycled water bottles. The uniform recycling program marks the first time Honda and UGN are using post-consumer textile waste for sustainable insulation material.

“It is part of UGN’s history and culture to maximize recycled content in our parts, reduce landfill by recycling our own by-products, and promote circular, mono-material technologies that

enable end-of-life vehicle recycling,” said Pranav Singh, director of purchasing & packaging for UGN Automotive. “Reusing Honda uniforms contributes to these efforts by increasing the amount of recycled materials available for insulators and opens the door to other post-consumer textile waste projects.”

Expanding Recycled Materials in Vehicles

The uniform recycling program builds on Honda’s longstanding commitment to reduce waste and incorporate higher recycled content in Honda and Acura vehicles. This includes working with suppliers to transform post-industrial textile scrap, such as fibers from denim, into vehicle insulation/absorption material. In collaboration with UGN, Honda annually reuses approximately 2,800 tons of recycled post-industrial textile waste – equivalent to 5.6 million pairs of jeans – and 3,000 tons of post-consumer PET (polyethylene terephthalate) bottles – equivalent to 6 million water bottles – for vehicle sound-absorbing insulation.

Other approaches to using sustainable materials in Honda and Acura vehicles have included soybean-based foam for vehicle headrests, recycled plastic water bottles and recycled Honda car bumpers for wheel liners, plant-based material for the seat fabric in the 2019 Acura RDX and Honda Clarity Plug-in Hybrid vehicle, and processed volcanic rocks for the roof liner in the 2003 Honda Element.

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BUSINESS BRIEFS

The Carton Council names sustainability and school recycling leader

■ The Carton Council of North America has appointed Lynn Dyer as vice president of sustainability and school recycling, and Carton Council board member.

Dyer is the chief sustainability officer at Carton Council member company Pactiv Evergreen. Prior to that, she served as president of the Foodservice Packaging Institute.

In addition to bringing her expertise and relationships to all facets of the Carton Council efforts, Dyer's role will focus on further strengthening school carton recycling programs nationwide. More than four billion milk and beverage cartons are consumed in schools each year, with the average U.S. school of 545 students consuming around 75,000 cartons a year. Approximately 11,200 carton recycling programs are operating in schools across the country.

Made mostly of paper, a renewable resource from well-managed forests, cartons contain some of the highest-value fiber in the recycling value chain. When recycled, cartons can have a second life as paper products, such as paper towels, toilet paper, paper cups and office and writing paper. Additionally, cartons play a vital role in a growing manufacturing industry where they are used to make sustainable building materials.

LRS appoints new CEO and CFO

■ Lakeshore Recycling Systems (LRS), a Midwest independent waste, recycling and portable services provider, has appointed two new executives to its leadership team. These strategic appointments reflect LRS' commitment to furthering its efforts of redefining resource recovery management, while ensuring financial excellence.

Matt Spencer is the new chief executive officer (CEO). As the new CEO, Spencer will be responsible for overseeing all aspects of LRS' operations, including strategic direction, business development, and customer relations. With a strong emphasis on safety and sustainability, Spencer is poised to drive LRS' mission of providing innovative waste management solutions that promote a cleaner and greener future.

Prior to joining LRS, Spencer held the position of chief executive officer with Sweeping Corporation of America (SCA) as well as chief operating officer at Waste Corporation of America (WCA). WCA doubled in revenue and profit during the six years under his leadership, which was driven by a significant M&A strategy.

In addition, LRS welcomes Luke Chenery as its new chief financial officer. Chenery joins LRS with a strong track record of leadership, exceptional financial acumen, and a passion for delivering results. With his strategic insights and broad expertise, Chenery will play a pivotal role in enhancing LRS's financial performance, optimizing operational efficiencies and contributing to the organization's long-term growth.

LRS acquires Titan - Environmental Recycling & Disposal and Moen Transfer Station

■ Lakeshore Recycling Systems (LRS), a Midwest independent waste, recycling and portable services provider, has acquired Environmental Recycling & Disposal (Environmental) and Moen Transfer Station, a family-owned and operated business servicing the disposal needs of Will County, Illinois for over 25 years.

Established in 1998, Environmental has built a reputation on grassroots principles, prioritizing customer satisfaction through honest pricing and reliable service throughout Chicago's Southwest Suburbs. LRS will bring its range of expertise, with a focus on expanding recycling platforms, to bolster the services provided for Will County. The acquisition will encompass Environmental's 10 existing municipal contracts, bringing 30,000 residential customers and 4,200 business accounts to LRS' rapidly expanding clientele.

The Environmental success story, grounded in perseverance, determination and a visionary approach, extends beyond traditional waste and recycling collections. The team completed the first successful MSW Transfer Station permit process in Will County in 25 years, paving the way for the opening of the state-of-the-art Moen Transfer Station in 2020 and positioning Environmental as the partner of choice for the waste management needs of the county and surrounding areas.

This acquisition comes on the heels of a transformative start to 2023 for LRS, which included the regionalization of all company operations, the opening of The Exchange, a state-of-the-art material recovery facility in the Chicagoland area, and the largest acquisition in the company's history – Michiana Recycling and Disposal. The acquisition of Environmental Recycling & Disposal and Moen Transfer Station serves as a clear indicator of the continued growth to follow throughout 2023.

Nucor board of directors

■ Nucor Corporation announced that its board of directors elected Nicholas C. Gangestad as a director effective September 1, 2023.

Gangestad currently serves as senior vice president and chief financial officer of Rockwell Automation, Inc., the world's largest company dedicated to industrial automation and digital transformation. Prior to joining Rockwell in 2021, he had a long career with 3M Company, a diversified technology company with a global presence in the fields of manufacturing, worker safety, healthcare and consumer goods.

Gangestad served in various roles with 3M, including senior vice president and chief financial officer from 2014 to 2020; vice president, controller and chief accounting officer from 2011 to 2014; director of corporate accounting from 2007 to 2011; and vice president, finance and Information Technology of 3M Canada from 2003 to 2007.

PMR Inc. makes multi-million dollar investment in machinery and renovations

■ PMR Inc., a full-service converter processor specialized in catalyst evaluation and refining solutions, announced a significant investment in brand-new machinery and extensive renovations across all its facilities. This strategic move is aimed at revolutionizing the converter recycling process by offering an unprecedented five day turnaround for suppliers.

By investing significant financial resources in upgrading each of its facilities over the next 12 to 18 months, PMR is embracing market realities and leveraging lower industry volumes to focus on top-tier machinery upgrades.

PMR's facilities will not undergo simultaneous upgrades and material may be centralized at already finalized locations to maintain shipping efficiency.

Republic Services appoints Meg Reynolds to its board of directors

■ Republic Services, Inc. announced that global investment executive Meg Reynolds has been appointed to its board of directors, bringing its membership to a total of 12. She will serve on the audit and sustainability & corporate responsibility committees.

Reynolds is co-founder, principal and global emerging markets equity portfolio manager at Westwood Global Investments, a national financial advisory firm headquartered in Boston. She has more than 30 years of investment experience.

Prior to co-founding WGI, Reynolds was portfolio manager of the Latin American Fund at Fidelity Investments. Earlier, she served in roles of increasing responsibility at Putnam Investor Services. Reynolds serves on several non-profit boards, including the Catholic Schools Foundation, Dana Farber Cancer Institute, Kelly Brush Foundation and Women's Foundation of Boston.

New production hall at Fuchs will enable expansion

■ Fuchs®, a manufacturer of specialist material handling equipment, announced the upcoming construction of a new, state-of-the-art production hall on its existing site in Bad Shonborn, Germany. The expanded manufacturing capacity will support Fuchs in growing both its product line and the global distribution.

The new production hall will feature cutting-edge design and engineering to provide Fuchs with increased production capacity, streamlined processes, and advanced technologies to maintain its position as a global leader in material handling solutions. As part of Fuchs' commitment to sustainability and environmental stewardship, the new facility will also focus on energy efficiency and eco-friendly practices, integrating the latest technologies to reduce its carbon footprint and optimize resource utilization.

Serco Loaders appoints Mark Shukla as director of sales

■ Serco Loaders, a fabricating and machining company, announced the retirement of Dale Williamson, director of sales, after 18+ years of dedicated service. Williamson played a vital role in the company's success and will be greatly missed. In conjunction with this retirement, Serco Loaders announced the appointment of Mark Shukla as director of sales to continue driving the company's growth and success.

During Williamson's tenure, he made significant contributions to Serco Loaders' achievements and has been instrumental in growing the Serco brand throughout the dealership network as well as brilliantly representing Serco in Minnesota. His expertise, leadership, and commitment to excellence have been invaluable to the company and has garnered deep respect within the industry.

Shukla is an accomplished professional with an extensive background in material handling in truck mount loaders, stationary mount loaders and large material handlers. He brings knowledge in a wide range of applications including storm cleanup, waste, scrap, logging and rail to the position and is making him an ideal successor to continue Serco's upward trajectory.

CP Group welcomes Mark Henke as director of process improvements

■ CP Group, a leading material recovery facility (MRF) equipment and solutions provider, has appointed Mark Henke as its new director of process improvements. With over 25 years of experience in the recycling industry, Henke brings a wealth of knowledge and expertise to the role.

Prior to joining CP Group, he served as the senior recycling manager at Republic Services, where he led various process MRF improvement initiatives resulting in significant gains in efficiency and throughput. In his new role, Henke will be responsible for leading CP Group's process improvement initiatives and driving operational excellence to meet the evolving needs of CP customers.

As part of the Operations department, Henke will identify and implement process enhancements, increase operational efficiency and improve quality with a focus on the perspective of the customer throughout the entire process.

Henke has been environmentally aware from a young age, which led him to pursue a higher education within the environmental field. His involvement in multiple recycling operations and passion for the recycling industry will help develop the relationship with CP Group's customers' understanding their needs and goals. "I truly believe that anything we can do to preserve natural resources and the environment is a positive direction," Henke commented.

BUSINESS BRIEFS

Pro Disposal USA sold to Coastal Waste & Recycling

■ Brown Gibbons Lang & Company (BGL) announced the sale of Pro Disposal USA, LLC (Pro Disposal) to Coastal Waste & Recycling Inc. (Coastal), a portfolio company of Macquarie Asset Management (MAM), an asset management arm of the Australian bank Macquarie Group Limited.

BGL's Environmental Services investment banking team served as the exclusive financial advisor to Pro Disposal in the transaction. The specific terms of the transaction were not disclosed.

The acquisition of Pro Disposal further expands Coastal's footprint to multiple high-growth markets.

Founded by Alex Cano in 2007, Pro Disposal is a vertically integrated solid waste management solutions provider operating across the greater Lowcountry markets from Savannah, Georgia to Charleston, South Carolina. The Ridge-land, South Carolina-based company's presence in a fast-growing geography was further accelerated following the 2020 recapitalization by Ironwood Capital and industry veterans Jeff Kendall, Dan Clark, and Frank and Jerry Antonacci. This supported a vertical integration and geographic expansion strategy, yielding one of the largest independently owned waste management firms in the southeastern U.S. Pro Disposal's end-to-end waste management solutions include residential collection, commercial front-load, grapple, roll-off, transfer and processing, portables, and disposal services. The company's established presence across the region, integrated service model, and commitment to service quality, safety, and sustainability have enabled the company to entrench itself with municipal, commercial, and industrial customers.

Based in Boca Raton, Florida, Coastal serves more than 450,000 customers throughout Florida and Georgia, making it one of the largest waste management firms in the southeastern U.S. The company employs more than 800 people and operates more than 425 collection and support vehicles. The company's operations include 18 facilities in Florida, Georgia, and South Carolina, which include two transfer stations, 11 maintenance and hauling facilities, and five material recovery facilities.

Nucor adds Nicholas C. Gangestad to the Nucor board of directors

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Republic Services increases quarterly dividend

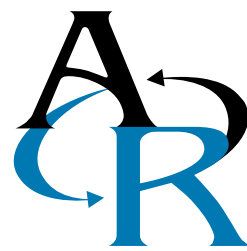
■ Republic Services, Inc. announced that its board of directors has approved a \$.04 increase in the company's regular quarterly dividend. The quarterly dividend of \$0.535 per share will be paid on October 13, 2023, to shareholders of record on October 2, 2023.

NWRA names interim president

■ The National Waste and Recycling Association (NWRA) announced that Dr. Darrell Smith, president and chief executive officer of NWRA left the organization on August 4. Dr. Smith has led the association since 2017.

The NWRA membership represents nearly 70 percent of the North American private waste and recycling services market. The waste and recycling industry provides essential services that benefit local communities and businesses in their environmental and sustainability aspirations.

The NWRA Board of Trustees will undertake a search for the association's next leader. In the interim, Jim Riley, NWRA's chief counsel and senior vice president will assume the day-to-day responsibilities of the association.



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Microplastics - small but dangerous

by MAURA KELLER

mkeller@americanrecycler.com

The distribution, size and quantity of microplastics in the environment and the recently discovered health risks are propelling microplastics (MPs) to the forefront of industrial, environmental and health concerns. These tiny but powerful elements are also capturing the attention of the plastics recycling industry like never before.

Microplastics are small fragments of any type of plastic and are defined according to the U.S. National Oceanic and Atmospheric Administration as “less than 5mm in length.”

According to Ryan McManus, government affairs manager at the American Public Works Association (APWA), an organization providing a voice for all public works industries across public and private sectors, microplastics are getting more scrutiny because of the sharp rise in plastic production in the past century and the increased impact on the environment and risk to human health. Additionally, McManus said they have attracted concern given their relationships with other “emerging contaminants” like Per- and Polyfluoroalkyl Substances (PFAS), which can occur as microplastics and are used as a coating on plastics that then break down concurrently. Non-PFAS microplastics can also involve PFAS at certain stages in their production process.

“PFAS are synthetic chemical compounds used in a variety of industrial and consumer product applications, found in water, air, fish and soil that can contaminate locations across the globe,” McManus said. “They are harmful to humans in small doses and have been attributed to several health issues including cancer, low infant birth weights, immune disorders and thyroid hormone disruption. And as the APWA recognizes, the presence of PFA compounds in source water and drinking water is of increasing public concern due to their widespread use and environmental persistence.”

Companies and organizations like the APWA – a non-for-profit, international



Recently discovered health risks are propelling microplastics to the forefront of industrial, environmental and health concerns.

association that serves more than 30,000 members of those who work in the field of public works – have been trying to address the issue of microplastics through research, reducing use of plastics and improvements in recycling to ensure less plastic waste ends up in the environment. In some cases, businesses have changed materials entirely for packaging, such as when fast-food restaurants ceased using foam containers.

According to Alexander Tompkins, chief executive officer and co-founder of Microplastic Free Systems and Safety, a biotechnology start up based in Rhode Island, microplastics are the result of plastic degradation.

“Plastic does not biodegrade, rather it erodes and fragments into smaller pieces, ranging in size from five millimeters to one micron. The natural forces that initiate this process include heat, UV radiation, wind action, ocean currents, and other physical stressors,” Tompkins said.

Microplastic pollution has been found in every corner of the world – from the snow on Mt. Everest to seawater in the Marianas Trench. In Tompkins’ state of Rhode Island, a 2019 study concluded there are upwards of 4.6 million individual pieces of plastic in 100 grams of Narragansett Bay sediment.

The Largest Concerns

The three concerns surrounding microplastics are their carcinogenic chemical makeup, potential for increased pollution, and the need for physical removal. As Tompkins explained, microplastics can absorb, hold, and deposit toxic substances into the body.

“Our food and water supply is saturated with plastic pollution. A study from the University of Vienna found that five grams of plastic, the weight of a credit card, passes through the human gastrointestinal tract a week. The digestive processes the microplastics are subjected to cause them to expel the chemicals they

carry,” Tompkins said.

With 8.3 billion metric tons of plastic created since the 1950s, Tompkins said we are only beginning to observe the effects of plastic degradation into microplastics. The total amount of plastic produced has yet to fully degrade.

“What we are currently observing is what has broken down in the past 70 years. This suggests an exponential increase in microplastics pollution as more plastic breaks down,” Tompkins said.

Unlike biodegradable waste, plastic cannot return to the earth to be used again. Over millions of years, the plastic waste will become a synthetic oil. Tompkins said this is the third major concern with microplastic pollution.

“To have any measurable impact on microplastics pollution in our time, we must physically remove microplastics from our food and water supply, as well as the environment at large,” he said.

See MICROPLASTICS, Page B6

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Amazon single-use plastic packaging declines by over 11 percent in a year

Marking a victory for the oceans, Amazon announced in its 2022 sustainability report that its overall use of single-use plastic across its global operations network (i.e., orders shipped through its fulfillment centers) declined by 11.6 percent from 2021 to 2022. The company reported that it used a total of 85,916 metric tons (189 million pounds) of single-use plastic to ship its packages in 2022, down from 97,222 metric tons (214 million pounds) of single-use plastic packaging in 2021. This number excludes shipments for products bought through Amazon's websites that are not fulfilled by the company.

Additionally, the company noted that it is "phasing out padded bags containing plastics in favor of recyclable alternatives." This means that Amazon will also replace its ubiquitous blue and white plastic mailer, which is not accepted by most curbside recycling programs, in favor of other alternatives (including lightweight paper-padded mailers). According to the report, the company has already replaced 99 percent of mixed-material mailers containing plastic in the U.S. and Canada with recyclable paper alternatives.

Amazon's decision to phase out padded bags containing plastics will have a significant impact on reducing the company's plastic footprint given that pouches and bags represent over 30 percent of e-commerce plastic packaging globally. To date, Amazon has moved away from plastic packaging in most of its major markets including Europe, India, Japan, and Australia, but had yet to make a significant commitment to reduce plastic packaging in the United States or on a global basis.

"If Amazon follows through, this is good news for the oceans," said Matt Littlejohn, senior vice president of Oceana. "The world's largest retailer is now using less single-use plastic and has just committed to phase out padded bags containing plastic globally. Given the extensive use of this type of packaging and Amazon's additional plastic reductions made in major markets outside the U.S., this effectively means that the company will significantly reduce its plastic use as called for by the company's shareholders. The company should also commit to a phase-out deadline and make an explicit commitment to reduce all of its plastic packaging in addition to



Photo courtesy of Oceana

padded mailers but this is real progress and will mean that much less single-use plastic will find its way into the world's seas."

Oceana has advocated for Amazon to reduce its plastic packaging use since 2020, releasing reports estimating the company's plastic footprint and directly advocating with the company to commit to reducing single-use plastic. Oceana also campaigned at Amazon's headquarters in Seattle and Arlington, Virginia in support of a shareholder resolution (filed by Oceana ally As You Sow and supported by others from the Break Free From Plastic movement) calling on the company to reduce its plastic packaging use by one-third.

The world's oceans are being devastated by plastic, including the type of plastic used in Amazon's packaging. Studies have estimated that individuals from 55 percent of seabird species, 70 percent of marine mammal species, and 100 percent of sea turtle species have ingested or become entangled in plastic. Amazon's plastic packaging is made from the most common form of marine plastic litter in nearshore ocean areas – plastic film – which is the deadliest type of plastic to marine animals.

"We will monitor Amazon's developments going forward to ensure the company continues to disclose a shrinking plastic packaging footprint," added Littlejohn, "but this progress and commitment is a real win for all the shareholders, employees, citizens, and members of the Break Free From Plastic movement who called for the company to move away from single-use plastic."

EPA awards \$25,000 to Rice University for research on PFAS waste in landfills

The U.S. Environmental Protection Agency (EPA) announced \$25,000 to Rice University to fund their research on treating PFAS (per- and polyfluoralkyl) waste in landfills as part of the Agency's People, Prosperity, and the Planet (P3) Program.

"EPA's P3 program, now in its 20th year, is an exciting and unique program that recognizes the power of students to translate imagination and science into new solutions that protect human health and the environment," said Chris Frey, assistant administrator for EPA's Office of Research and Development. "Congratulations to this year's teams. Their innovative projects tackle critical environmental issues and include an eco-friendly coating to reduce contamination in marine environments, a device to remove microplastics from stormwater, an air monitoring and filtration technology to reduce student exposures to air pollutants, and more."

The Rice University team is developing a chemical-free UV unit that



degrades PFAS waste leachate in landfills using boron nitride, a nontoxic chemical compound. By providing a non-toxic method to treat PFAS-containing wastewater emanating from landfills, the amount of PFAS and other organic pollutants will be reduced in the water supplies of nearby communities. Scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals.

Twenty-one Phase I recipients will receive grants of up to \$25,000 each to help them develop their proof-of-concept, and will be eligible to compete for a Phase II grant of up to \$100,000 to further implement their designs.

Borealis to acquire Rialti S.P.A., recycled polypropylene compounds producer

Borealis, a leading provider of advanced and circular polyolefin solutions and a European leader in base chemicals, fertilizers and the mechanical recycling of plastics, has signed an agreement to acquire Rialti S.p.A., an Italian polypropylene compounder and recycler. Closing of this transaction is subject to customary regulatory approvals.

Based in the area of Varese, Italy, Rialti is one of the European market

leaders specialized in production of sustainable polypropylene (PP) compounds with a focus on mechanically recycled PP feedstock from post-industrial and post-consumer waste. With over 30 years of experience, Rialti utilizes its annual capacity of 50,000 tonnes to make injection molding and extrusion PP compounds with applications in different industries, including automotive, appliances and construction.

Grant helps improve foam polystyrene recycling for High Point, North Carolina

The city of High Point, North Carolina, received a \$50,000 grant from the Foodservice Packaging Institute's Foam Recycling Coalition (FRC) that enables the city's 117,000 residents to recycle materials such as foam polystyrene cups, plates, bowls, clamshells, egg cartons and meat trays, as well as block packaging foam.

The FRC grant assisted with funding the purchase and installation of a foam densifier at the High Point material recovery facility. Densifiers are used to compact foam products into foam blocks or ingots. The city sells the foam ingots to end markets to be manufactured into thermal insulation panels for foundations, walls and roofs.

Residents of High Point, as well as the neighboring communities of Jamestown and Archdale, can take their polystyrene foam to drop-off locations that house drop-off trailers. The locations include Ingleside Compost Facility, High Point Public Library and High Point MRF.

"Residents have already shown a positive response to recycling polystyrene foam," said Rebecca Coplin, beautification supervisor for the city of High Point. "The two trailers collecting foam with the

Tiny House Community Development are replaced once per week, 10 to 20 drop-offs per week are received at the MRF, and an influx of foam from the High Point Furniture Market is seen twice per year. As we get the word out, we expect an increase in residential drop-off activity that will benefit the recycling of foam and other materials."

High Point's public information office will inform residents about the addition of foam polystyrene recycling via communications, including posters, printed materials and the city's website and social media. The MRF offers tours, information booths and educational programming that will include messaging on recycling polystyrene foam.

The grant is made possible through contributions to FRC, which focuses exclusively on increased recycling of post-consumer foam polystyrene. Its members include Americas Styrenics; Chick-fil-A; CKF Inc.; Dart Container Corp.; Dyne-A-Pak; Genpak; INEOS Styrolution America LLC; Lifoam Industries, LLC; Pactiv Evergreen; and Republic Plastics.

High Point is the 31st grant recipient to receive FRC funding since 2015.

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PepsiCo fails to report new reuse goal as company's plastic usage increases

PepsiCo kicked the single-use plastic bottle down the road when it failed to quantitatively detail progress towards its new goal to reach 20 percent reusable beverage packaging in its recently published 2022 sustainability report (its ESG Summary). Additionally, the company reported a 4 percent increase in its total plastic use from 2021 to 2022 (from 2.5 to 2.6 million metric tons). PepsiCo also reported that it increased its use of virgin plastic by 11 percent against a 2020 baseline. PepsiCo did not explain how its reusable goal, dependent in part on newer business models, would reduce the company's single use plastic footprint for its existing beverage business.

In March 2022, in response to a shareholder resolution submitted by the non-profit As You Sow, PepsiCo agreed to set a time-bound goal by the end of 2022 to increase reusable beverage packaging to help cut its use of single-use plastic. Then, in December 2022, PepsiCo announced a pledge to increase the percentage of beverage servings delivered through reusable models from 10 percent to 20 percent by 2030. However, in the company's sustainability report published on June 29, more than a year after PepsiCo first committed to increasing reuse, the company stated that it was not reporting on its progress towards this goal because it is "in the process of identifying and validating global servings volume sold by customers in reusable fountain cups and this information

is not currently included in our reporting." PepsiCo "plan[s] to report progress against this goal starting with 2023 data."

In response to PepsiCo's recent reporting, Oceana released the following statement from director of Strategic Initiatives, Dr. Dana Miller:

"PepsiCo needs to stop delaying and start taking its reusable goal seriously. The oceans can't wait. The surge in the use of single-use plastic packaging by Pepsi and other companies is overwhelming the seas. A report by Oceana found that increasing the market share of refillable bottles by 10 percent in all coastal countries in place of single-use plastic could keep as many as 7.6 billion plastic bottles per year out of the ocean. It is critical for our oceans that PepsiCo and other major beverage companies increase their use of refillable and reusable containers.

PepsiCo's main rival, The Coca-Cola Company, has a global goal to reach 25 percent reusable packaging by 2030 (and is currently at 14 percent). They are also the leading sponsor of the Paris 2024 Olympic Games, which the Mayor of Paris announced would be free from single use plastic. PepsiCo, along with The Coca-Cola Company, a member of the Business Coalition for a Global Plastics Treaty, is calling for countries to set binding targets for reusable packaging. The negotiation of the UN agreement is slated for completion by 2024.

Oceana is dedicated solely to ocean conservation.

Republic Services and Ravago partner to advance circularity in the plastics industry

Republic Services, Inc., a leader in the environmental services industry, and Ravago, a leader in polymer recycling and distribution, announced the creation of Blue Polymers, LLC, an innovative partnership that will help advance circularity in the plastics industry. Blue Polymers is developing a network of facilities designed to produce 100 percent post-consumer recycled products to supply plastic manufacturers' growing demand for sustainable solutions.

The new facilities will utilize recycled polyethylene and polypropylene from Republic Services' Polymer Centers to create high-quality, recycled resin for consumer packaging and other applications. The process will convert high-density polyethylene and polypropylene into fully formulated products for use in both food-grade and non-food-grade sustainable applications.

"Companies today are setting aggressive recycled content goals, and Republic Services has a unique opportunity to meet the demand for high-quality recycled plastics through our Polymer Centers, and now the creation of Blue Polymers," said Jon Vander Ark, Republic Services president and chief executive officer. "Ravago's leadership in plastics recycling and compounding makes them a natural partner as we take the next step in advancing plastics circularity."

Four Blue Polymers facilities are planned to open over the next four years, beginning in late 2024. Combined, they're expected to produce 300 million pounds



per year of recycled plastics. Products will include custom-blended and compounded materials for individual customers to help them achieve their sustainability goals and comply with federal, state or local requirements for recycled content.

Additionally, a portion of rPET flake from Republic's Polymer Centers will be marketed and distributed by Ravago through its extensive customer network.

Republic Services and Ravago offer distinctive and complementary expertise to help fulfill sustainable packaging demand. As a leader in the environmental services industry, Republic processed 5 million tons of recyclables, including more than 300 million pounds of plastics, in 2022. Ravago has extensive expertise in distribution, resale, compounding and recycling for plastic materials, and can efficiently deliver to customers at scale.

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FERROUS						
#1 Bushelings	per gross ton	\$505.00	\$505.00	\$500.00	\$505.00	\$509.00
#1 Bundles	per gross ton	490.00	490.00	494.00	493.00	495.00
Structural	per gross ton	370.00	370.00	375.00	369.00	395.00
#1 & #1 Mixed Steel	per gross ton	325.00	326.00	325.00	339.00	340.00
Crushed Auto Bodies	per gross ton	218.00	218.00	219.00	224.00	258.00
Shredded Auto Scrap	per gross ton	398.00	399.00	399.00	395.00	470.00
NON FERROUS						
#1 Copper Bare Bright	per pound	3.71	3.62	3.70	3.65	3.71
#2 Copper Wire & Tubing	per pound	3.53	3.49	3.49	3.37	3.50
Aluminum Cans	per pound	.72	.73	.75	.74	.75
Al/Cu Radiators	per pound	1.77	1.76	1.79	1.81	1.84
Aluminum Radiators	per pound	.56	.58	.60	.61	.62
Heater Cores	per pound	1.51	1.55	1.57	1.58	1.60
Stainless Steel	per pound	.67	.66	.64	.67	.66

All prices are expressed in USD. Printed as a reader service only.

DISCLAIMER: American Recycler (AR) collects pricing and other information from experienced buyers, sellers and facilitators of scrap metal transactions throughout the industry. All figures are believed to be reliable and represent approximate pricing based on information obtained by AR (if applicable) prior to publication. Factors such as grades, quality, volumes and other considerations will invariably affect actual transaction prices. Figures shown may not be consistent with pricing for commodities associated with a futures market. While the objective is to provide credible information, there is always a chance for human error or unforeseen circumstances leading to error or omission. As such, AR is not responsible for the accuracy or completeness of the information provided, or for outcomes arising from use of this information. American Recycler disclaims any liability to any person or entity for loss or damage resulting from errors or omissions, including those resulting from negligence of AR, its employees, agents or other representatives.

EQUIPMENT SPOTLIGHT

Plastic Recycling Equipment

by **MARY M. THORNTON**

maryt@americanrecycler.com

As environmental challenges continue around the globe, sustainable waste management, which includes plastic recycling, has become paramount for the world to adopt. In just the U.S., plastic recycling volumes increased in 2021 by 280.3 million pounds. This resulted in over five billion pounds of post-consumer plastic recycled. There is a wide range of products available for the various processes involved in this recycling sector.

Mike Curci, president, Amandus Kahl USA, explained how the company's flat die pellet mills "represent the pinnacle of innovation and efficiency and offer a game-changing solution for the waste and chemical plastics industry. We're a trailblazer in this field and these cutting-edge machines are equipped with top-notch features such as diverse sizes to suit varying needs and unmatched ease of use. The unique aspect lies in our product's ability to transform waste and chemical plastics into valuable pellets, contributing to a circular economy. This process not only minimizes environmental impact, it also provides a sustainable energy source."

Curci believes the waste and chemical plastics industries are encountering a significant transformation, and that solutions offered by Amandus Kahl are at the forefront of it all. "As regulations tighten and environmental consciousness rises, the demand for sustainable waste management solutions has soared. Amandus Kahl's pellet mills align perfectly with these trends, empowering companies to adapt to a greener approach and comply with evolving



Amandus Kahl USA

industry regulations. We keep a keen eye on advancements in palletization and continually enhance the efficiency and performance of our products. Our dedication to research and development benefits our clients with real time technological expertise. Our company proudly serves diverse markets and we invite potential clients to test their materials in our highly versatile pellet lab. We're confident we'll provide tailored solutions for each client's unique requirements. Our flat die pellet mills are a transformative solution for the waste and chemical plastics industries, because we focus on innovation, seamless user experience, and adaptability to industry trends. Amandus Kahl is the

partner of choice for businesses seeking to embrace sustainability and make a positive impact on our planet."

The evolution of TOMRA's new generation AUTOSORT™ boasts a wide range of standard and optional sorting technologies that create "a highly flexible and accurate optical sorting system to meet the needs of plastics recyclers, both today and in the future. TOMRA's FLYING BEAM™ near-infrared (NIR) sensing technology offers improved light efficiency, flexible installation and improved material detection. Standard SHARP EYE™ technology increases light efficiency, while maintaining the same energy consumption to enhance sorting sharpness and improve the separation of difficult-to-target fractions," stated Eric Olsson, Area Segment Manager Plastic for TOMRA Recycling Sorting.

The AUTOSORT Intelligent Object Recognition (IOR) software combines with these advanced technologies to make it possible to separate single polymer types, such as polyethylene terephthalate (PET), polypropylene (PP) and polystyrene (PS) at high throughput rates. The product detects material types by chemical composition, shape and color that many other technologies cannot see. Using SHARP EYE, the base AUTOSORT distinguishes the small differences between PET bottles and PET trays thermoformed, so they



TOMRA Recycling Sorting

See PLASTIC RECYCLING, Page B5

MANUFACTURERS

■ ENHANCED LISTINGS

■ **ACS Group**
Andre Adams
 262-641-8600
www.acsgroup.com

■ **Amandus Kahl USA**
Mike Curci
 470-421-0970
www.akahl.com

Bilt-Rite Disposal Equipment Ltd.
Max Chiera
 905-857-0330
www.bilt-riteequipment.com

CM Shredders
Mario Vazquez
 800-848-1071
www.cms shredders.com

Eldan Recycling
Carsten Nielsen
 716-731-4900
www.eldan-recycling.com

Granutech-Saturn Systems
Greg Wright
 877-582-7800
www.granutech.com

Herbold Meckesheim USA
David Lefrancois
 401-597-5500
www.herboldusa.com

Hosokawa Polymer Systems
David Vill
 860-828-0541
www.polysys.com

International Baler
Sean Usoff
 800-231-9286
www.intl-baler.com

Komar Industries, Inc.
Mandy Howenstine
 614-836-2366
www.komarindustries.com

Maren Engineering Inc.
Jeff Wiegers
 800-875-1038
www.marenengineering.com

Continued on Page B5

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ENHANCED LISTINGS

Plastic Recycling Equipment

■Continued from Page B4

can be separated for equivalent product recycling.

The compact and flexible AUTOSORT helps solve feedstock supply and quality demands for plastic packaging sorting – including polyolefin and PET materials, via the product's NIR technology, which detects resin chemical composition. So, AUTOSORT offers a deeper level of detection and sorting of polyethylene (PE) and PP by polymer than other sorting methods offered in the market. Combined with SHARP EYE, the standard unit also allows separation by color types, enabling new value streams for recyclers.

The standard AUTOSORT unit leverages classical artificial intelligence (AI) “to deliver high performance in sorting accuracy of the most complex applications. TOMRA's add-on GAIN™ technology expands the system's capabilities through employing AI's powerful deep learning subset to offer an even more granular polymer sorting of plastics. Compact add-on technology, DEEP LAISER™, expands the system's sorting power by leveraging deep learning to remove contaminants like black plastic and glass from feed material, undetectable by NIR and visual spectroscopy (VIS) technologies” said Olsson.

Van Dyk designs, sells and services custom tailored, turnkey plastics

reclamation facilities (PRF). The firm is also the exclusive North American source for Bollegraaf products. Alex Wolf, technical director, explained, “We select the best piece of equipment for every stage in the sorting process to maximize quality and yields. Experts in engineering turnkey sorting systems, we begin with Bollegraaf's patented conveyor designs and then provide a variety of screening technologies, which all have their best use case in different stages of the system design. With AI powered optical sorters, polymers can be sorted at highest efficiencies. Air separators protect downstream equipment and allow for a finer separation of plastic commodities. With extensive knowledge about various wash line technologies, Van Dyk can also take the wash line portion under its umbrella delivering a complete turnkey solution from bale to finished flake or pellet.”

Depending on the type of polymer that is targeted, there can be a very strong focus on upstream processing. Good cleanup of the material that often ends up being washed and extruded downstream ensures high yields and low operating costs. PET recycling requires a more detailed cleanup in the PRF stage, to shape the final flake down to parts per million (PPM) quality levels. Flake sorting, also by polymer, plays an important role in PET PRFs. Wolf noted a strong

MANUFACTURERS Cont.

Pallman Industries Inc.

Marcelo Moura

973-907-468

www.pallmann.eu

TOMRA Recycling Sorting

Ty Rhoad

980-279-5650

www.tomra.com/

[waste-metal-recycling](http://waste-metal-recycling.com)

Van Dyk Recycling Solutions

Alex Wolf

203-967-1100

www.vdrs.com

Vecoplan, LLC

Matt Lowman

877-738-3241

www.vecoplanllc.com



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2900 S. 160th St.

New Berlin, WI 53151

262-641-8600

info@acscorporate.com

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1225 Old Alpharetta Road, Suite 260

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www.akahl.com

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Van Dyk Recycling Solutions

Resin production increases in June

U.S. production of major plastic resins totaled 7.8 billion pounds during June 2023, an increase of 0.9 percent compared to the prior month, and an increase of 0.9 percent compared to the same month in 2022, according to statistics released by the American Chemistry Council (ACC). Year-to-date production was 47.3 billion pounds, a 0.6 percent decrease as compared to the same period in 2022.

Sales and captive (internal) use of major plastic resins totaled 8.0 billion pounds during June 2023, an increase of 2.0 percent compared to the prior month, and an increase of 4.5 percent from the same month one year earlier. Year-to-date sales and captive use were 46.4 billion pounds, a 1.4 percent decrease as compared to the same period in 2022.

PLASTICS comments on EPA draft strategy

The Plastics Industry Association (PLASTICS) has submitted comments in response to the Environmental Protection Agency's (EPA) request for public input on its Draft National Strategy to Prevent Plastic Pollution.

“The plastic industry appreciates the opportunity to submit comments to the EPA, however, we are disappointed with the agency's draft strategy,” said PLASTICS' president and chief executive officer Matt Seaholm. “The EPA was directed by Congress in an overwhelmingly bi-partisan way to focus on post-consumer materials management and infrastructure, and instead the agency's first stated objective in this strategy is to reduce the production of essential materials rather than address plastic waste.”

“The strategy is not focused on improving infrastructure, meanwhile, the plastics industry continues to invest billions of dollars in innovations to expand recycling capacity. Understanding

and addressing the essential nature of plastics and tackling environmental challenges should not be mutually exclusive.”

“We don't recycle enough, and we need to improve recycling rates in the U.S., period. PLASTICS remains eager to collaborate with the EPA, stakeholders and anyone who is willing to work towards our common goal of effective solutions to keep plastic waste out of the environment,” concluded Seaholm.

PLASTICS' comments state that the EPA's draft strategy should:

- Recognize plastics serve a critical and sustainable role in modern life and have more than “some potential benefits.”
- Acknowledge that innovations in product and material design have outpaced our infrastructure, negatively impacting our country's ability to recycle at acceptable levels.
- Revise a draft consistent with the bipartisan legislation that directed the

EPA to develop a strategy to improve post-consumer materials management and infrastructure, not pre-production and product restrictions.

- Foster circularity, not advocate production limits.
- Hold all materials to the same standard and recognize that plastics often outperform other materials environmentally.
- Revise the draft strategy following appropriate, thorough stakeholder engagement in a transparent process to develop practicable and achievable goals, gain and leverage greater collaboration necessary to achieve those goals.

The Plastics Industry Association (PLASTICS) is the only organization that supports the entire plastics supply chain, including equipment suppliers, material suppliers, processors and recyclers, representing over one million workers in the \$468 billion U.S. industry.

Microplastics

■Continued from Page B1

The Great Unknown

John Scott, senior chemist, The Illinois Sustainable Technology Center at the Prairie Research Institute, pointed out that there are a tremendous amount of “unknowns” related to microplastics.

“But here is what we do know. Every year, we produce a lot of plastics. I mean...really a lot. Last time I checked, globally we were making north of 550 million metric tons every year. Also concerning is that it’s not slowing down. Just the opposite, it increases every year,” Scott said. “The last projection I read was that we will in the billions of metric tons annually by the year 2050. So where is all this plastic going to go? Well the vast majority will end up in the environment (via landfills or become fugitive). It is not going away anytime soon. It’s just going to break down to smaller and smaller sizes over time. Also note, as these plastics get smaller, they become more mobile in the environment, have a greater potential to cross biological membranes, and are more difficult/costly to remediate. Consider this as well...even if we stop using plastic cold turkey today...we will still have legacy plastics around for hundreds of years to come.”

And while we don’t know the adverse effects resulting from microplastic exposure, Scott believes the story is much more complex than just plastic alone. Plastics are extremely complex materials. As he explained, we have thousands of different polymer types and to make it even more complex, most materials are a mixture of polymers.

“What I think is alarming, are the additives used in plastics. There are well over 10,000 different chemicals that can potentially be used with plastics. Many of these chemicals are either known or suspected carcinogens, endocrine disrupters, and so on,” Scott said. “Also we know that plastic in the environment can soak up pollutants from their surrounding environment and we know that they can harbor/promote biological materials (microbes) that are much different than the surrounding environment. So, can they be a vector for chemical pollutants and biological materials?”

The Role of Plastic Recycling

Scott does not believe there will be a single “silver bullet” that will solve the microplastic problem, but he does believe the recycling industry can have a major impact in this area.

“I firmly believe that we will soon see dramatic innovations and new technologies in this industry that will make them more efficient and capable to handle more diverse materials. Recycling rates of plastic is quite low, around 8 percent I believe, and this leaves much room for improvement,” Scott said. “Recycling already has great infrastructure and it has already overcome many of the huddles associated with behavior change. People know recycling and willing to do it. If the recycling industry can find new ways to handle materials contaminated (with things such as food or additives) and find ways to deal with multi-layered and multi-component plastics, then they can hopefully drive down the current production rates



Microplastics will affect the recycling industry drastically.

of plastic and reduce the amount of environment contamination.”

Of course, there has been a tremendous effort to use recycled plastic packaging or plastic free alternative packaging. Tompkins pointed out that though it is a great way to repurpose plastic after a single use, recycled plastic packaging doesn’t remove the plastic waste from the economy or environment, it transfers the pollution to another product.

“The issue with plastic free alternative packaging is the hidden plastics and chemicals within the packaging. For example, corrugated cardboard boxes have a plastic film on the interior, and glass bottles have a plastic film on the bottle cap,” Tompkins said.

For recyclers handling plastic recycling, the focus on microplastics will continue to put more pressure on the industry to improve on reduction, reuse and development of, or shift, to more biodegradable and less toxic forms of plastic.

“Attention should be paid to potential regulatory efforts on the federal level, but also across different states and localities where some governments may be pursuing more aggressive measures,” McManus said. “Some laws that are seen as successful in achieving these goals may be mimicked by other states in some cases, before their effectiveness may even be fully determined.”

One of the biggest challenges facing the plastics recycling industry as it relates to microplastics is ironically, their small size.

“Recycling plastic means processing, which means potentially the release of microplastics in that process. This may make recycling self-defeating, particularly if not done carefully,” McManus said.

Tompkins suggested that to fully address the issue of microplastics in packaging, companies should commit to entirely plastic free packaging, such as hemp fibers stretched into plastic-like films, burlap bags for groceries, and glass bottles without the plastic film. Once plastic packaging is a thing of the past, the removal of microplastic will be possible.

Of course, how the microplastics issue will continue to evolve within the plastics recycling space will depend on science and human behavior, what sort of plastics are more prevalent in the future and what we deem as a society to be permissible uses.

“Microplastics will affect the plastic

recycling industry drastically. As our understanding of microplastics pollution increases, we see more ways microplastics enter our environments and us. One such revelation recyclers should pay attention to is that microplastics can travel through the water cycle and wind currents,” Tompkins said.

As plastic is broken down in a recycling setting, microplastics are created and released into the facility. Without proper ventilation, the microplastics produced will be released into the air and water surrounding the facility. Then wind action and the water cycle distribute the plastic pollution over an enormous area.

“Furthermore, airborne microplastics in the facility will get into the lungs of plant workers and onto their bodies. Those workers will spread microplastics outside the facility, exposing others to potentially carcinogenic substances,” Tompkins said. “The use of high efficiency particulate air (HEPA) filters can, theoretically, remove at least 99.97 percent of any airborne particles with a size of 0.3 microns (μm). At 0.3 μm , a recycling facility is more readily equipped to control any MPs produced during the process.”

McManus added that there is going to be a lot of research and while we cease using plastics in some areas, there will likely remain significant demand in areas that are essential to modern living and have limited preferable alternatives to replace plastics. “As things develop, APWA will continue to keep public works professionals up to date on best practices, new technologies, and opportunities to address contamination and help protect the health of their communities and the environment,” he said.

And as Tompkins pointed out, plastic is an amazing material and has enhanced our lives in more ways than one could mention.

“I don’t believe we will ever rid, or should rid, ourselves of it. However, like anything else in life...too much of a good thing can be really bad. I envision innovations to address these problems will occur at every stage of the pollution prevention hierarchy,” Scott said. “I believe we will find ways to reduce our use of these materials, find replacement materials with less environmental impact, find better ways to recycle these materials, find ways to recover energy from these materials, and to some extent, treat some of these materials that are already out there.”

UPCOMING EVENTS

SEPTEMBER

9/25-9/28

Missouri Recycling Association 2023 Annual Conference

DoubleTree St. Louis Hotel
Chesterfield, Missouri
moraconference.org
573-491-42551

9/27-9/29

WASTECON 2023

Hynes Convention Center
Boston, Massachusetts
wastecon.org/events
800-467-9262

OCTOBER

10/12-10/14

Automotive Recyclers Association Annual Convention

Sheraton Kansas City Hotel
at Crown Center
Kansas City, Missouri
a-r-a.org
615-476-4501

10/22-10/24

WV Educational Conference on Litter Control & Solid Waste Management

Oglebay Resort
Wheeling, West Virginia
awvswa.org
304-414-1122

NOVEMBER

11/1-11/2

NERC Fall Conference

Hotel Providence
Providence, Rhode Island
nerc.org
802-451-8852

Polypropylene Recycling Coalition reports measurable impact on three-year anniversary

The Recycling Partnership reported on the progress of the Polypropylene Recycling Coalition (Coalition) and provided insights into the changing landscape of polypropylene recovery.

Including the latest round of grants awarded this month, the Coalition has provided \$10.3 million in grant funding to 41 materials recovery facilities (MRFs) to support new and improved polypropylene capture and recycling community education to residents. The Partnership estimates that once MRFs can install and operationalize new equipment, these investments will result in more than 42 million new pounds of polypropylene recovered annually for processing in growing U.S. markets, and will ultimately give this material another life as it is incorporated into new products. As a result of the Coalition's investment, 34.2 million people in the U.S. will have new or improved ability to recycle polypropylene as part of their recycling programs, keeping valuable recyclables out of landfills.



MRFs invest new equipment to recycle polypropylene.

Echo, Getty Images

With 41 grantees at varying stages of their projects, ranging from ordering of their new equipment to installation and operation, one-third of grantees have had their equipment in place long enough to

provide sufficient data on the impact of the grants. The reporting facilities collectively captured 1.3 million pounds of polypropylene annually pre-grant; post-grant they are capturing 11 million

pounds of polypropylene annually – a ninefold increase. Translated into recycling rates, this represents an estimated increase from 1.2 percent pre-grant to 10 percent post-grant.

“In the last few years, there has been notable investment in polypropylene recycling,” said Brittany LaValley, senior director of materials advancement at The Partnership. “While polypropylene is undoubtedly making progress as a recyclable material through the Coalition’s support and other meaningful investment, much more work and investment will be needed to make it a universally accepted recyclable material,” she noted.

Polypropylene’s popularity as a material used in product packaging has fueled both an increase in the amount of it generated by U.S. households and a surge in demand for post-consumer recycled polypropylene. According to The Partnership, single-family households in the U.S. are estimated to generate more than 2 billion pounds of polypropylene each year.

MBA Polymers opens new recycling facility in the UK



MBA Polymers UK is set to boost its customer proposition with the opening of a new, technologically advanced site in Wimblington, Cambridgeshire. The new site is a pivotal step in its mission to establish a comprehensive nationwide plastic recycling network, amid increased customer demand for lower carbon products.

The site will accelerate the company’s ability to produce 100,000 tonnes of recycled plastics for its customers by 2030.

MBA Polymers UK offers a unique solution to some of the most complex plastics waste streams – taking plastic bound for landfill and transforming it into high quality, recycled polymers.

This expansion will not only enable MBA Polymers UK to supply a higher volume of these recycled polymers to meet the demand, but it will also support the company’s growing product portfolio, as it increases its color range.

The Cambridgeshire plant will be operational from September 2023, creating 23 new staff positions.

With the expansion of this new recycling facility, MBA Polymers UK strengthens its leadership in the plastics recycling industry, demonstrating its dedication to meeting changing customer demand through innovation, while always remaining focused on sustainability and a greener future for all.

ACT urges EPA to include textiles in extended producer responsibility

The American Circular Textiles (ACT), a coalition of organizations dedicated to driving circularity in the U.S. fashion sector, submitted a letter to the Environmental Protection Agency (EPA), urging the agency to include textile waste in its efforts to prevent plastic pollution. The letter, submitted by Rachel Kibbe, executive director of ACT, outlines the pressing challenges of textile waste and proposes concrete solutions to combat the environmental and social impacts caused by the industry.

The letter commends the EPA’s efforts to address plastic and other waste in waterways and oceans but emphasizes the significant impact of textile waste on environmental health, human well-being and climate change. With approximately 60 percent of clothing production materials consisting of plastic, including polyester, acrylic and nylon textiles, the disposal of over 30 billion pounds of textile waste annually in landfills and incinerators is becoming the nation’s fastest-growing waste stream, a major methane emitter and an outsized source of microfiber pollution.

In its letter responding to the EPA’S

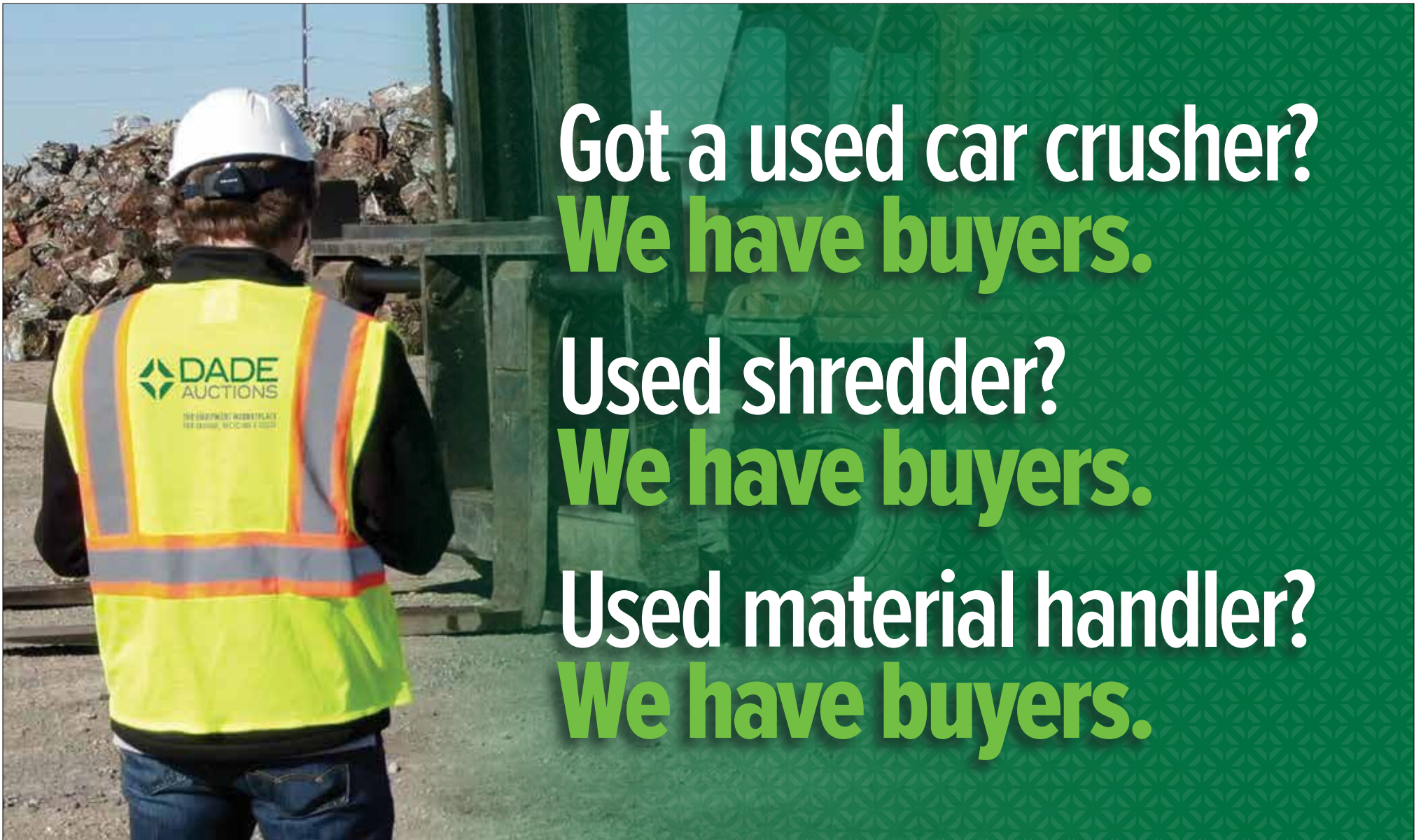
Draft National Strategy to Prevent Plastic Pollution docket, ACT proposed amendments to existing Extended Producer Responsibility (EPR) laws to include reuse and recycling of textiles. The coalition suggests that federal Congressional committees collaborate to pass bipartisan legislation providing a unified roadmap for state textile reuse and recycling solutions, including but not limited to textile-specific EPR laws aligned with the waste hierarchy. This approach aims to harmonize national textile collection targets and the allocation of funds for textile reuse and recycling logistics, infrastructure, market development and innovation.

Kibbe stated, “We believe that by incorporating these recommendations into your strategy, we can make significant progress in reducing plastic waste and promoting circular fashion, ultimately contributing to a more sustainable and equitable future.”

ACT looks forward to collaborating with the EPA and other stakeholders to effect positive change and drive the transformation of the U.S. fashion industry toward a more sustainable and circular model.



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