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The challenge of today's plastics in recycling



WHAT'S INSIDE

- Scrap Metals Market Watch... A10
- Business Briefs..... A14
- Classified Advertisements A15
- Equipment SpotlightB4

- Recology achieves goal to power fleet with 90 percent renewable or alternative energy. Page A2
- NYC Department of Sanitation calls on all residents to stop littering. Page A7
- Steel imports down 13.5 percent in February vs. January. Page A10
- Bridgestone develops tire using 75 percent recycled materials. Page A13

State of the scrap tire industry

by MAURA KELLER

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Each year, the U.S. generates approximately 300 million scrap tires. While a number of end up in landfills, the majority of scrap tires are used in a number of ways, including as ground material rubber to create rubber-modified asphalt.

According to John Sheerin, director, End-of-Life Tire Programs at U.S. Tire Manufacturers Association (USTMA), the tire recycling industry is in a state of transition. As he explained, there is a distinct trend towards increased utilization of ground tire rubber in new products like molded and extruded goods and landscaping mulch.

"Further growth in rubber modified asphalt is expected," Sheerin said. "However, continuing movement towards non-solid fuels have adversely impacted tire derived fuel markets that historically have consumed the majority of scrap tires since the 1990s. So, we are seeing a shift towards more material reuse. The last 12 months have seen a return to normalcy after the global pandemic with in-person meetings and compliance inspections resuming. We are seeing more activity."

Amy Brackin, senior vice president of sustainability at Liberty Tire Recycling, added that in many ways the tire recycling industry is the most complex it has been in the last decade. As she explained, the industry must now balance the demand from retailers and manufacturers to provide the highest and best use of end-of-life (EOL) tires, the further demand from retailers to have timely and dependable end-of-life (EOL) tire services, and the regulatory demands of us as recyclers.

"Balancing these sometimes- competing goals has become a complex equation," Brackin said.

Reflecting on the last few years and the impact of COVID, Brackin pointed out that it's been an interesting time for everyone in the industry.

"In early 2020, we saw an immediate drop in tire flow from our customers as a result of lockdowns, which dramatically reduced travel, and therefore tire usage. The balance of the year created a multitude of inconsistencies," Brackin said. "We navigated the ebb and flow of business openings and closings, quarantines and labor shortages across all industries. By 2021 however, we saw a dramatic increase in the number of tires coming in. People were traveling, primarily by car, with stimulus money to spend. As we entered 2022, we saw things settle into a more 'normal' tire flow and regain consistency by the end of the year."

End markets performed well during this same period. For instance, tire derived fuel (TDF) has been up largely due to rising energy costs. In addition,



Scrap tires ready for shredding and processing by recyclers. Adobe Stock Image | 289877051

construction markets boomed. Lawn and garden products, such as rubber mulch and molded products made from recycled rubber, saw increases due to the number of household projects completed during COVID.

"However, our markets were negatively impacted by inflationary costs to produce and ship goods," Brackin said. "As we have moved from late 2022 into the first quarter of 2023, we have seen some signs of softening in the crumb markets and expect this to continue through 2024 if current economic forecasts are correct."

Ongoing Challenges

The biggest challenge facing the scrap tire industry continues to be that the growth in scrap tire generation has exceeded the growth in scrap tire recycling markets. As Sheerin pointed out, while the recycling markets have grown, that growth has not been enough to overcome the continued growth in generation of scrap tires.

"We have therefore seen more tires going to landfills even as ground tire

rubber markets have grown significantly," Sheerin said.

USTMA has focused on circular and sustainable scrap tire recycling markets. The organization has supported infrastructure legislation for many years and the Infrastructure Investment and Jobs Act (Bi-partisan Infrastructure Bill) passed by Congress and signed into law is helping to incentivize circular and sustainable scrap tire markets.

Additionally, according to Sheerin, scrap tire markets can benefit from provisions of the Inflation Reduction Act.

"We are working with stakeholders and states to grow markets for rubber modified asphalt which lasts longer and cracks and ruts less than standard hot mix asphalt and is therefore more resilient and sustainable," Sheerin said. The Rubber Modified Asphalt State of Knowledge report USTMA co-sponsored with The Ray (a full-scale highway innovation demonstration laboratory in Georgia) and authored by University of

See SCRAP TIRE INDUSTRY, Page A4

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Recology achieves goal to power fleet with 90 percent renewable or alternative energy

Recology has achieved its goal to power its fleet with more than 90 percent renewable or alternative energy in 2022.

“We made a commitment in 2019 to significantly reduce our use of conventional fossil fuels. In hitting this mark, we achieved one of the most ambitious fleet goals in our industry,” said Recology chief executive officer Sal Coniglio.

“At the time, renewable fuels were unavailable in many areas where we provide service, including the Pacific Northwest, so we knew it would be tough. Through concerted efforts, we achieved the goal, and in doing so, we helped broaden the availability of cleaner fuels on the West Coast.”

Most Recology collection and transfer trucks now operate on renewable diesel or renewable natural gas. Both fuels are lower-carbon replacements for conventional diesel and conventional natural gas.

Recology also operates electric vehicles, including the first electric Class 8 rear-load collection trucks deployed in

the U.S. By shifting to cleaner fuels, optimizing collection routes, and introducing electric trucks, Recology reduced fleet emissions by 44 percent in three years (2019-2022).

Recology’s transition away from conventional fossil fuels began in the early 1990s, when the company started using compressed natural gas and liquified natural gas in its fleet.

“Demanding and utilizing cleaner fuels is just one of the ways Recology is demonstrating our commitment to reducing our carbon footprint and helping our cities achieve their climate goals,” said Coniglio. “We are the industry leader in resource recovery systems, including recycling and curbside composting collection programs.”

While Recology continues switching more trucks to renewable and alternative fuels, the company also continues testing zero-emission trucks and working closely with vehicle manufacturers to further enhance fleet sustainability.



Recology trucks now operate on renewable diesel or renewable natural gas.

NWRA accepting applications for 2023 Recycling Awards

The National Waste & Recycling Association’s (NWRA) Recycling Awards recognize companies, organizations or individuals that have made a significant impact in the waste and recycling industry. They are intended to celebrate achievements and commitments, as well as provide inspiration for others.

“These awards honor the very best in the industry for excellence in educating the public on smart ways to recycle; creating innovative approaches to advance our work; constructing state-of-the-art recycling facilities; and building revolutionary partnerships that help protect the environment and increase collaboration with the recycling ecosystem,” said NWRA president and chief executive officer Darrell Smith.

The six award categories will be recognized at the NWRA executive leadership roundtable being held in October. The deadline for applications is July 1, 2023.

Sustainability Partnership Game Changer Award

This award is open to partnerships that include municipal and county governments, regulatory agencies, community organizations and the private industry that successfully partnered to implement game changing initiatives, policies or programs that advance sustainability in their community. Examples include, but are not limited to, increased recycling participation, targeted recycling or reuse campaigns, innovative organics collection and management efforts, carbon emissions reductions, repurposing closed landfills, or the preservation

of biodiversity. Applicants must demonstrate how partnership and collaboration with another entity or the general public resulted in a meaningful and quantifiable sustainability outcome or breakthrough.

Excellence in Recycling Public Education Award

This award is open to public, private, and non-governmental organizations that exemplify excellence in recycling or sustainability public education programs. Applicants should submit program materials and methodologies, as well as data that quantify the impact and success of the program.

Recycling Equipment Innovator of the Year Award

This award is open to recycling equipment designers and manufacturers that successfully challenge and advance recycling sector operations. It celebrates innovation in design and manufacturing that increases the effectiveness or efficiency of recycling equipment and operations. Applicants should provide data that validates improved outcomes as a result of their innovation.

Recycling Facility of the Year Award

This award is open to new or existing recycling facilities that are either NWRA members or public sector non-profits. It recognizes the facility that leads all other facilities in one or more key measurements, such as innovation, quantity of materials collected and/or processed, types of materials recovered, site improvements, or sustainability measures adopted. Applicants should provide metrics to affirm that their facility is the preeminent recycling facility.

Construction & Demolition Recycling Facility of the Year Award

This award is open to new or existing construction and demolition (C&D) recycling facilities that are either NWRA members or public sector non-profits that have embraced waste prevention and careful use or reuse of resources. It is intended to recognize a facility as a model for construction and demolition waste diversion, as well as for instilling a culture of waste prevention and responsibility among employees. Applicants are asked to describe methodologies and provide data to quantify the impact of their efforts.

Organics Management Facility of the Year Award

This award is open to new or existing organics management facilities that are either NWRA members or public sector non-profits that have made a significant impact in diverting organics through their management facility. It is intended to celebrate achievements and commitment, as well as provide inspiration for others. Applicants should describe methodologies or programs and provide data to quantify the impact and success of their work.

Nomination Fees

The nomination fee for NWRA’s flagship award – Sustainability Partnership Game Changer – is \$300 per application. For all other awards, the nomination fee is \$150 per application.

Email Jonathan Taylor at Jtaylor@wasterecycling.org with your questions and/or completed award application.

Republic Services expands organics recycling with anaerobic digestion facility

Republic Services, Inc. announced a significant expansion of its organics recycling operations in California with the acquisition of North State Bioenergy, an anaerobic digestion facility north of Sacramento. California requires the diversion of food and yard waste from landfills as part of its climate strategy. This important infrastructure will help Republic customers comply with the law and meet their own sustainability goals.

The North State Bioenergy facility is the company’s first anaerobic digester, recycling food waste and other organics collected from across Northern California. The anaerobic digestion process breaks down this organic material and creates biogas, which can be used to generate electricity or converted into renewable natural gas to fuel vehicles in Republic’s fleet. The facility’s operations are fully circular, with biogas generating enough electricity to power the facility.

Republic has extensive operations to support organics recycling, including six compost facilities and three commercial food waste pre-processing sites.

In 2022, Republic recycled one million tons of food and yard waste. Diverting this organic material from a landfill provides a climate benefit equivalent to removing the annual emissions of 16,000 passenger vehicles. Organics recycling directly supports Republic’s sustainability goal to increase recovery and circularity of key materials from the waste stream by 40 percent by 2030.

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Scrap tire industry

■Continued from Page 1

Missouri identified the state-of-the-art for the technology and identified data gaps for additional research.

“We are also working with our partners First State Tire Recycling, Liberty Tire Recycling, and the Tire and Rubber Association of Canada to prepare a Tire Derived Aggregate State of Knowledge Report by University of Wisconsin. Tire Derived Aggregate is a long lasting, lightweight building material that can be used in retention basins and infiltration gallery to help purify stormwater,” Sheerin said.

USTMA recently send a letter to Congress identifying areas where policymakers can continue to work together including investment in the expansion of sustainable and circular infrastructure solutions for scrap tires, such as use in rubber modified asphalt (RMA) in infrastructure projects and research to assess the benefits of tire derived aggregate (TDA).

From Brackin’s vantage point, she said that typical of most industries, rising fuel costs, increased operating expenses, and labor shortages have hit the tire recycling industry hard, making it impossible to collect and process tires at the same costs as even a year ago.

“Specific to tire recycling, I would say it is finding a consistent balance for outbound material that aligns with quantities being generated. You can’t just decide not to pick up a customer’s used tires when your warehouse is full, or you don’t have demand in your backend markets,” Brackin said. “Retailers also require dependable service that provides sustainable solutions for their used tires. It is a daily challenge across our industry, but expanding end markets can lessen this impact in the future. Hand in hand with that is the challenge of market development. We need growth of end markets for tire-derived material. This comes with collaboration, significant capital investments, and

subsidized margins on outbound products to truly displace virgin materials in use today.”

For context, in the USTMA’s 2021 Scrap Tire Management Summary, the data shows that scrap tire recycling is not keeping pace with increased annual generation. In total, markets consumed 71 percent of scrap tires in 2021, a decrease from around 76 percent in 2019.

While this is a concern for such players as Liberty Tire, it should be noted that this is an incredibly high overall recycling rate.

“Nonetheless, there are several factors that drove this decrease on a percentage basis. A passenger tire equivalent, or PTE, is the average weight of a tire,” Brackin said. “This weight has increased by roughly 15 percent over the last decade with the growth of the SUV market and new tire technologies. In addition, the electronic vehicle (EV) market has grown and the heavier load of these vehicles and the higher instant torque, are leading to increased tire wear. Regardless of the reason, we see this as a motive to expand our research, development, and investment into sustainable solutions for EOL tire material. We strongly believe consumer sentiment toward recycling and sustainability will be a key driver to help in this process.”

Continuous Innovations

As of late, Sheerin said technological innovations have not had a great impact on the tire recycling industry.

“No doubt there is tremendous innovation developing in many fields including pyrolysis, devulcanization, wire processing, and other areas, however, the impact on the market as of late has not been material,” Sheerin said. Further, tire manufacturing has tremendous innovation in sustainable and biobased materials, sensor technology, airless tire technology and many other fields. However, it typically takes many years for new tire technology to develop, become widespread and then reach end of life before the impact will be felt in the tire recycling industry.

Liberty has continued to invest significant capital to provide multiple end-use outlets to the industry as this is critical to the long-term success of tire recycling. Brackin stated that Liberty’s goal is to partner with companies that share the company’s vision to move end-of-life tire material up the value chain towards circularity.

So what type of innovations is the scrap tire recycling industry experiencing? Brackin said that in general, she would say the processing industry has become more sophisticated and efficient. Just like in tire production, processing technology continues to advance on all fronts, from plant and collection efficiency to how end-of-life tires get into secondary markets.

“Not long ago, tires were simply shredded and buried. That evolved into processing tires into smaller pieces, but even then it was not really managed with the consistency required by more sophisticated end markets,” Brackin said. “Today, tire recycling has advanced to respond to the needs of those markets and can deliver a highly specialized

product, with consistent quality, at sizes so small that they are impossible to differentiate with the naked eye.”

More broadly, tire manufacturers are incredibly focused on sustainability and continue to innovate tires with new technology almost daily. As Brackin explained, some of those changes in raw materials and design have begun to impact the industry and require more engagement between the recyclers, the equipment providers, and the manufacturers, to ensure they are all staying ahead of those trends and can manage them effectively.

In the end markets, the industry is also seeing several emerging technologies that have continued to gain momentum.

“Rubberized asphalt barriers that once required specialized equipment and operators, have been broken down with the introduction of dry mix alternatives that can be incorporated using existing jobsite equipment,” Brackin said. “We are now able to compete in any paving size application, from parking lots to major interstates. These engineered dry mix additives capture all the good performance benefits of rubber modified asphalt, se while being simpler to use in the field. This enables pavement owners to make an impact in terms of longevity, sustainability, and life cycle costs in rubberized asphalt projects. In addition to asphalt, gasification, devulcanization and pyrolysis are all areas we’ve seen much focus on with goals of creating circularity in tires and providing alternatives to virgin carbon black.”

Projected Outlook

From Sheerin’s viewpoint, the scrap tire industry is moving towards recycling markets which are sustainable and circular. This driving force coming from both within and outside the industry as a social objective will have major impacts on how tires are made, used and managed at end of life in the future.

Brackin agreed that the market outlook is very positive. As she explained, end-of-life tires have taken a different position in the minds of tire manufacturers, retailers, and consumers as sustainability is moving more into the day-to-day vernacular of the world.

“As consumers become more educated on the benefits of using end-of-life tires, the only limit in how these tires can be used is the imagination of companies seeking more sustainability in the future,” Brackin said. “The more people think outside the box about the possibilities, the greater the positive impact on the environment and the world around us will be.”

“Movement towards electric vehicles may require more tires because those heavier vehicles and their acceleration characteristics may wear tires faster. This gives us even more motivation to grow the markets for end-of-life tires,” Sheerin said. “As Yogi Berra said, ‘it’s tough to make predictions, especially about the future’. Nevertheless, I’m optimistic that the tire industry will lead the way towards a more sustainable future and a more circular economy.”

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NewsVoice of Salvage, Waste and Recycling
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American Recycler is published 12 times per year, postage paid at Columbia, Missouri.

SUBSCRIPTIONS: Call our offices at 877-777-0043 or visit AmericanRecycler.com. US 1 year \$58; 2 years \$89.

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10.9 million pounds of waste recycled at DaVinci Roofscapes

During the past 11 years, DaVinci® Roofscapes, a division of Westlake Royal Building Products™ USA Inc. has reprocessed more than 10.9 million pounds of polymer scrap materials. The composite slate and shake roofing manufacturer announced that its operations successfully recycled 1,697,249 pounds of polymer waste in 2022 – the most ever recycled by the company in a single year.

“This is more than half a million pounds of scrap in excess of what we reprocessed in 2021,” according to Mark Pagel, general manager at DaVinci Roofscapes in Lenexa, Kansas. “For the sixth consecutive year we have contributed to net zero landfill scrap. Our waste is repurposed and reused, making this plant an exceptionally environmentally friendly operation.”

At DaVinci, every pound of polyethylene scrap generated by the company’s expansive manufacturing operation goes into repurposed product. Green initiatives are always being enhanced to assure scrap from making roofing tiles is recycled. The first priority is to reuse the product at the Lenexa operations.

“We make our composite roofing and siding tiles with virgin polymers,” says Pagel. “Our products are created in dozens of colors and color blends. When we switch from one color to another, there’s a natural transitioning period

between the colors during the change. Those transition tiles are ‘off spec’ and cannot be used, so we recycle them.”

Pagel relates that the transition tiles are carefully pulled off the product line. They’re segregated into specifically colored scrap bins. In the past year, 635,941 pounds of these colored tiles were ground up and repurposed into starter roofing tiles, which are generally unseen on the roof. The reground product was also inserted into the underside cavity on solid accessory roofing parts, with virgin resins used on the top visible portion of the product.

The remainder of the recycled product was shipped out of the DaVinci facility for use by other companies. One of those companies, Dimex, used 539,414 pounds of recycled DaVinci product to make landscaping materials for consumer use. The remaining 521,894 pounds were shipped to additional companies that turn them into pallets.

DaVinci slate and shake tiles are made of virgin resins, UV and thermal stabilizers. A highly-specialized fire retardant is added to the mix, making them fire resistant. DaVinci products are warranted to last decades on homes and commercial projects. However, after their lifespan, they are also 100 percent recyclable. These same features make the recycled polymers advantageous when they are used in recycled products.

California carpet differential assessment to increase

March 17, 2023, CalRecycle directed CARE to increase the carpet differential assessment effective April 1, 2023. The increase is necessary to protect the health of the California Carpet Stewardship Program, including the financial stability of the collectors, processors, and recyclers. This CalRecycle directive follows several months of requests by CARE for CalRecycle approval of an assessment increase to extend program solvency.

CARE’s differential assessment plan, dictated by statute, is based on two factors: carpet material, as in broadloom vs. tile, and percent of post-consumer (PC) content, as in greater than or equal to 10 percent post-consumer content, and less than 10 percent post-consumer content. The new assessment amounts will replace the current amounts that came into effect on April 1, 2022:

- Broadloom with greater than or equal to 10 percent post-consumer carpet rises to \$.56/square yard from \$.33, a 70 percent increase.
- Broadloom with less than 10 percent post-consumer carpet rises to \$.58/square yard from \$.35.
- Carpet tile with greater than or equal to 10 percent post-consumer carpet rises to \$.71/square yard from \$.48, a 48 percent increase.
- Carpet tile with less than 10 percent post-consumer carpet rises to \$.73/square yard from \$.50.

Carpet retailers in the state are advised to implement immediately the point of purchase changes that are needed to collect the correct, updated assessment from customers. Carpet mills are responsible for advising retailers on which products qualify in terms of post-consumer content. CARE will continue to supply point of purchase material as well as training support materials for sales staff. Retailers are encouraged to visit the CARE website for the latest developments.

The California carpet stewardship legislation (AB 2398, 1159 and 729) is designed to find ways to incentivize the growth of carpet reclamation and recycling and still allow the market to work. The law (AB 2398) generates funding to meet its stated goals through the assessment on all carpet sold in California. California consumers pay the assessment when they buy carpet. Those monies then support CARE’s efforts, including subsidies paid to recyclers, grants to expand capacity and collection, technical assistance, market development and outreach, to increase carpet recycling in California.

The California Carpet Stewardship Program has seen extraordinary progress in recent years, despite economic and technological challenges, including a record recycling rate in 2022.

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Crown Shred & Recycling installs single stream system

Installation is underway in Regina, Saskatchewan, where Crown Shred & Recycling Inc. is building a brand new 30tph single stream system. With the popularity of single stream collection rising in Western Canada, Anatoli Davidian, chief executive officer of Crown Shred, saw an opportunity to step into this market with a highly automated system run by today's most advanced technology. The new facility anticipates a substantial increase in the volume of material processed by Crown Shred, which plans to truck in material from up to 500 miles away.

"The COVID-19 pandemic has caused a decrease in recycling rates and an increase in single-use plastics and packaging waste, presenting new challenges for the recycling industry," says Davidian. "Crown Shred's new facility is equipped with advanced sorting and separation systems that can effectively process a wide range of materials to help address these challenges and mitigate the impact of the pandemic on the recycling industry." Davidian says the facility's primary goal is to provide a sustainable waste management solution that

encourages higher recycling rates in the area and contributes to a cleaner, healthier environment.

The new single stream recycling facility was designed with advanced technology and equipment to increase the efficiency of the recycling process. The facility can process a variety of materials including plastics, paper, cardboard, glass, and metals. Crown Shred chose Van Dyk Recycling Solutions of Norwalk, Connecticut to supply the equipment and build the MRF.

The sorting process is highly automated, reducing contamination risk and ensuring materials are properly sorted for maximum value. The facility is designed to minimize the environmental impact of the recycling process, optimize resource utilization, and reduce energy consumption.

Building construction is well underway and equipment will begin arriving later this month.

Crown Shred anticipates the demand for sustainable waste management solutions will continue to grow in Western Canada as more people become environmentally conscious.

Rumpke expands acceptable recycling items list

Effective immediately, Rumpke Waste & Recycling will accept disposable paper, plastic and aluminum cups in curbside and dropbox programs.

"As a recycling leader, Rumpke is constantly working with end users to develop solutions for expanded recycling opportunities," said Jeff Snyder, Rumpke's director of recycling. "Our commitment to our recycling operation remains a top priority."

Recent innovations in paper and plastic recycling have resulted in commitments from end-users to accept and recycle more material. Paper mills have pledged to recycle paper cups and advancements in plastic recycling have increased the demand for additional types of plastic products.

"Last year, Rumpke began accepting tubs made from polypropylene. With consumer driven demand for more environmentally friendly options, more and more companies are transitioning to polypropylene cups," said Snyder.

Examples of acceptable cups include paper and plastic beverage cups from fast-food restaurants (Starbucks, McDonalds, etc.), plastic souvenir cups and Ball brand aluminum cups. Additional guidelines include:

- Plastic lids should be reattached to plastic cups.
- Plastic lids from paper cups should be removed and discarded.
- Straws and stoppers are not accepted.
- Colorful Solo brand cups are not accepted. These cups are made from

polystyrene and Rumpke currently does not have a secure, long-term end user for this material.

- Ceramic and glass cups are not accepted. In fact, they can be damaging to the glass recovery process.
- K-cups are not accepted.
- Paper cups are not accepted in Northeast Ohio where Rumpke partners with a third party processor.
- No cups will be accepted in Central Kentucky where Rumpke partners with LFUCG to process material.

Paper cups processed at Rumpke's recycling facilities will be made into cardboard and paperboard products, plastic cups will be used to make new plastic containers and aluminum cups will be made into aluminum cans.

Rumpke customers can recycle the following items:

- Plastic bottles, jugs, tubs (butter, sour cream, cottage cheese tubs as well as yogurt and fruit cups) and disposable plastic cups, NOT Solo cups
- Cartons
- Glass bottles and jars (any color)
- Aluminum cups and cans and steel cans
- Paper, paper board (cereal boxes, 12-pack containers, mail, etc.), cardboard and paper cups (paper cups not accepted in the Cleveland Region)

All items should be clean, empty and placed loose in recycling containers to ensure they can be properly sorted and recycled.

WASTE

New York DEC sues 29 companies for illegal dumping

New York Attorney General Letitia James and Department of Environmental Conservation (DEC) Commissioner Basil Seggos announced a lawsuit against 29 waste haulers and brokers for illegally dumping waste at a site in Saugerties, Ulster County. The companies repeatedly violated state law by transporting more than 3,000 truckloads of construction and demolition (C&D) waste originating from the New York City metropolitan area to the site in Saugerties, which was only authorized to accept waste from Ulster and Dutchess counties. With this lawsuit, Attorney General James seeks full disgorgement of all revenues and profits gained from this illegal activity, and potentially millions of dollars in penalties.

"We have environmental and solid waste laws in New York for a reason: to protect our land, our water, and our people," said Attorney General James. "By ignoring these laws and repeatedly dumping construction waste where they were not permitted, these 29 companies threatened our natural resources and risked health and safety of New Yorkers in Ulster County. My office remains committed to aggressively enforcing our environmental protection laws and holding those who violate them fully accountable."

"Rather than bring their solid waste to local facilities that were authorized to accept it, Joseph Karolys and dozens of hauling accomplices chose instead to treat the waste illegally, dump it in violation of our stringent environmental laws, and then not address the consequences," said DEC Commissioner Seggos. "DEC is working closely with the Attorney General to hold these polluters responsible and uphold our solid waste requirements that protect public health and the environment."

In June 2020, Attorney General James and Commissioner Seggos filed a lawsuit against Joseph Karolys, the owner and operator of the Saugerties dump site, for repeatedly accepting C&D waste from the 29 haulers and brokers named in today's lawsuit, in flagrant violation of New York's solid waste and water pollution laws. In tandem with that action, the Office of the Attorney General (OAG) and DEC commenced an investigation into the various companies that brought waste to the Karolys site in Saugerties. The investigation revealed that over a period of three years, 29 waste transporters and waste brokers unlawfully caused over 3,000 loads – approximately 100,000 cubic yards – of C&D waste to be transported from multiple construction sites in New York City and Long Island to the site, which was not authorized to receive solid waste from outside Ulster and Dutchess counties.

C&D waste from highly urbanized areas like New York City is more likely to

be contaminated with petroleum or hazardous substances than waste material from less urbanized areas. Despite the fact that there are sites and facilities in or near New York City where these companies could have lawfully delivered this waste, the haulers named in today's lawsuit instead chose to deliver to the Karolys site, which is located about two to three hours north of the pick-up location. The suit alleges that their willingness to travel from the New York City metropolitan area to Saugerties just to dump these loads suggests they knew that Karolys was unlawfully accepting these materials at his site. Karolys also charged these companies a fee that was much lower than what any legitimate facility in the New York City area would charge, and the suit further alleges that as a result, the haulers knew that Karolys was running an illegal business.

For the wrongdoing alleged in the lawsuit, Attorney General James and Commissioner Seggos are seeking full disgorgement of all revenues, profits, and gains derived from the illegal activity, and millions of dollars in statutory penalties for violations of state law.

The 29 companies named in the suit, along with their owners and/or operators, are:

- AGP Industries LLC
- American Recycling Management LLC
- Atlas Roll-Off Corp.
- B&A Trucking Corp.
- DNA Transport, LLC
- Dynamic Environmental Contractors, Inc.
- E&E Commercial Corp.
- ECC Trucking Corp.
- Finest Materials LLC
- H&P Industries Inc.
- IEV Industries Corp.
- J & D Carrying & Construction Corp.
- J.B. Trucking of NY Inc.
- James DePietro Enterprises LLC
- JK Concrete Ready Mix Inc.
- JR's Premium Trucking, Inc.
- K.D.E. Trucking Corp.
- La Americana Car Service, LLC d/b/a La Americana Trucking
- Logan Trucking, Inc.
- Modern Leasing, Inc.
- Northside Industries LLC
- P.J. Logistics, Inc.
- Richmond Construction Inc.
- River Transportation Services Inc.
- T. & R. Construction Corp.
- Tully Environmental Inc.
- Vigorous Industries Inc.
- Way Trucking Corp.
- Zewel Transfer LLC

This matter is being handled for DEC by Regional Attorney Ashley Johnson and Regional Materials Management Engineer David Pollock.

WASTE

Reducing waste is key to environmental health

The average central Ohioan creates as much as 10 pounds of waste a day and while more than half of the materials consumed are recycled, more than a million tons are still sent to the landfill annually.

Reducing reliance on the landfill has many environmental (and economic) benefits and helps to extend the life of the landfill, ensuring it's around longer for items that have no other place to go safely.

"When it comes to practicing the 3 R's (Reduce, Reuse and Recycle), reducing waste is not only easy to remember and do, but is also best for protecting the environmental health of the Region for future generations," said SWACO's executive director Joe Lombardi.

As central Ohio's population continues to grow, protecting the life of the landfill and the health of the environment will

take residents and businesses alike working towards similar sustainability goals.

SWACO offered several tips to help reduce the amount of waste being created in Franklin County.

1. Say No to Single Use Items – Use a reusable water bottle or party cup, or bring along your own takeout food container when eating out in lieu of using single use plastic items.

2. Borrow When You Can – Tool-lending libraries are a great way to avoid purchasing new hand and power tools that may have limited use around the home or office.

3. Buy Secondhand – To help cut costs and avoid waste, shop secondhand stores for equipment for kids' latest seasonal activities or events.

4. Eat Your Food – Shopping more frequently for fresh produce and buying

smaller quantities based on what you're able to eat right away will help reduce food waste.

5. Consolidate Activities – When it comes to running errands or on-line shopping, consolidate your activities and packages into one delivery to save on gas and avoid multiple boxes, stuffed with packing materials, from arriving at your home.

"Reducing your reliance on the landfill is easy when you make a commitment to choose a few low-waste activities and do them consistently throughout your day," said Director Lombardi. "And Earth Month is the perfect time to commit to making a change. You don't need to go big or be perfect in your efforts in order to have a positive impact."

PAPER

Expanding paper cup recycling

North Carolina and South Carolina are expanding their curbside recycling programs. Efforts are being made to include paper cups in residential recycling programs in both states. This announcement is made in partnership with the Foodservice Packaging Institute (FPI), a leading industry association working to increase recovery of foodservice packaging. FPI is working closely with local material recovery facilities (MRFs) and paper mills to add this highly desirable fiber as an acceptable commodity for curbside recycling.

"This recycling initiative in North Carolina and South Carolina represents a significant milestone in the advancement of sustainability and recycling efforts. Our team has worked closely with stakeholders in both states, and we are thrilled to witness the realization of this initiative. This is the initial phase of our roll-out plan, and we plan to extend our collaboration with counties and cities across the Carolinas," said Natha Dempsey, president of the Foodservice Packaging Institute.

The FPI is partnering with local communities to launch educational campaigns informing residents about the acceptance of clean and empty paper cups for recycling. Collected recyclables will be sent to Sonoco Recycling for processing. Recovered material will be supplied to the Sonoco paper mill in Hartsville, South Carolina, where it will be converted into new products, advancing the circular economy in the region.

NYC Department of Sanitation calls on all residents to stop littering

Amid noticeable and documented improvements in the cleanliness of our neighborhoods, one crisis persists: the preponderance of litter and dog waste on city sidewalks. The New York City Department of Sanitation, in collaboration with the Partnership for New York City, launched a substantial marketing campaign to shame these "garbage" New Yorkers – litterers and dog-poopetrators – once and for all. This is the first major anti-littering campaign by DSNY in at least 15 years.

"New Yorkers have had enough of litter, enough of filth on our sidewalks, and enough of feeling like there's nothing they can do about it," said New York City Mayor Eric Adams. "This administration has committed to 'Get Stuff Clean,' and our strategy is working, but we need everyone to do their part, and that's what this campaign is all about."

"Since the start of this administration, Mayor Adams has unleashed a tidal wave of cleanliness on our City, and the crest of this wave is finally hitting our streets – yet some people continue to fail in their basic duty to keep our neighborhoods clean by littering or not cleaning up after their dog. I don't know why they do it, and frankly, I don't

care why they do it. All I know is, if I see someone littering, I'll tell them where to stick it," said Jessica Tisch, commissioner of the New York City Department of Sanitation.

"If we want a clean city, every New Yorker needs to do their part," said Kathryn Wylde, president and chief executive officer of the Partnership for New York City. "The Department of Sanitation has upped their game, but they need our help! We're asking New Yorkers to get engaged in the future of our city at weloventnyc.nyc."

WE♥NYC is a citywide initiative to mobilize New Yorkers to come together to inspire civic action. Showcasing how New Yorkers can do their part when it comes to litter, the Partnership for New York City is supporting this important initiative via its donated media and other means.

This ad campaign, designed pro bono in a collaboration between an award-winning creative agency VMLY&R and the Department of Sanitation, is intended to enlist all New Yorkers in the work of calling out the offensive behavior that continues to disrupt the cleanliness of our streets. They appeared on bus shelters and Link

NYC kiosks across the five burroughs through April.

This ad campaign comes at a time of great strategic realignment for DSNY around the core mission of cleanliness. DSNY is now cleaning more than 1,500 long-ignored areas across the city, cracking down on the scourge of illegal dumping, and striving for clean and accessible streets by substantially, changing the hours at which trash are set out – and how it is collected.



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METALS

Steel imports down 13.5 percent in February vs. January

Based on preliminary Census Bureau data, the American Iron and Steel Institute (AISI) reported that the U.S. imported a total of 2,255,000 net tons (NT) of steel in February 2023, including 1,716,000 net tons (NT) of finished steel (down 13.5 percent and 14.3 percent, respectively, vs. January 2023). Total and finished steel imports are down 9.8 percent and 9.7 percent, respectively, year-to-date vs. 2022. Over the 12-month period March 2022 to February 2023, total and finished steel imports are down 6.8 percent and up 2.7 percent, respectively, vs. the prior 12-month period. Finished steel import market share was an estimated 22 percent in February and is estimated at 23 percent over the first two months of 2023.

A key steel product with a significant import increase in February compared to January was line pipe (up 35 percent).

Products with a significant increase in imports over the 12-month period March 2022 to February 2023 compared to the previous 12-month period include line pipe (up 49 percent), oil country goods (up 43 percent), standard pipe (up 39 percent), heavy structural shapes (up 34 percent) and tin plate (up 11 percent).

Over the 12-month period March 2022 to February 2023, the largest suppliers were Canada (6,943,000 NT, no change compared to the previous 12 months), Mexico (5,123,000 NT, down 1 percent), South Korea (2,804,000 NT, up 2 percent), Brazil (2,676,000 NT, down 32 percent) and Japan (1,264,000 NT, up 11 percent).

U.S. Imports of Steel Mill Products by Country of Origin
(thousands of net tons)

COUNTRY	FEB. 2023 PRELIM	JAN. 2023 FINAL	% VAR. FEB. VS. JAN.	YTD 2023 (2 MON.)	YTD 2022 (2 MON.)	% VAR. 2023 VS. 2022	MAR. 2022 TO FEB. 2023	MAR. 2021 TO FEB. 2022	% VAR.
Canada	538	593	-9.3%	1,131	1,047	8.0%	6,943	6,930	0.2%
Mexico	382	455	-16.1%	838	1,017	-17.7%	5,123	5,160	-0.7%
South Korea	225	139	62.5%	364	377	-3.3%	2,804	2,762	1.5%
Brazil	353	395	-10.7%	748	640	16.9%	2,676	3,928	-31.9%
Japan	54	136	-60.2%	190	187	1.6%	1,264	1,138	11.1%
Germany	79	100	-20.7%	179	157	14.5%	1,149	1,271	-9.6%
Taiwan	58	71	-18.7%	129	182	-29.3%	984	1,007	-2.3%
Turkey	27	29	-7.4%	56	155	-63.9%	901	1,012	-11.0%
Vietnam	41	43	-4.5%	83	215	-61.3%	805	1,120	-28.1%
China	53	70	-24.1%	123	117	5.7%	658	528	24.7%
India	41	20	107.2%	60	127	-52.5%	618	504	22.4%
Netherlands	50	31	62.9%	81	81	-0.2%	594	623	-4.6%
Romania	60	28	111.0%	88	52	68.8%	519	393	32.1%
Italy	24	61	-61.2%	85	59	43.5%	477	277	72.2%
Algeria	56	37	48.9%	93	136	-31.4%	466	489	-4.7%
All Other	216	401	-46.3%	617	844	-26.9%	4,340	5,394	-19.5%
Total	2,225	2,609	-13.5%	4,864	5,392	-9.8%	30,321	32,536	-6.8%
memo EU-27	316	408	-22.6%	724	615	17.7%	4,518	3,930	15.0%

Nucor to build new transmission tower production plant

Nucor Corporation announced the Company's Towers & Structures business unit will build a new state-of-the-art transmission tower production plant in Decatur, Alabama. The new plant will be located adjacent to the Nucor Steel Decatur sheet steel mill and will be the first of two new tower production plants the Company plans to build. The project is expected to create 200 full time jobs.

The plant in Alabama will be highly automated, utilizing efficient straight-line production, and will also include advanced hot-dip galvanizing operations. These state-of-the-art features will increase Nucor Towers & Structures' capabilities to provide engineered solutions for utility infrastructure and construction projects.

Last year, Nucor formed its Nucor Towers & Structures business unit when it acquired Summit Utility Structures

LLC, a producer of metal poles and other steel structures for utility infrastructure. In December, the company announced plans to establish a nationwide footprint by building two, new tower production plants for a combined investment of \$270 million dollars.

Several factors are driving increased demand for utility infrastructure, including grid hardening, renewable energy projects, building a nationwide network of EV chargers, natural disasters and replacements, and population growth. Nucor expects that federal government support for electric infrastructure and clean energy projects in the recent Infrastructure Investment and Jobs Act and Inflation Reduction Act will drive additional demand as they provide nearly half a trillion dollars in funding and incentives to build out the national clean energy future.



Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
FERROUS						
#1 Bushelings	per gross ton	\$471.00	\$494.00	\$495.00	\$518.00	\$520.00
#1 Bundles	per gross ton	450.00	471.00	475.00	495.00	500.00
Structural	per gross ton	375.00	385.00	389.00	385.00	460.00
#1 & #1 Mixed Steel	per gross ton	355.00	335.00	358.00	335.00	381.00
Crushed Auto Bodies	per gross ton	208.00	210.00	215.00	210.00	269.00
Shredded Auto Scrap	per gross ton	415.00	435.00	484.00	491.00	493.00
NON FERROUS						
#1 Copper Bare Bright	per pound	3.69	3.74	3.89	3.90	3.91
#2 Copper Wire & Tubing	per pound	3.50	3.61	3.72	3.79	3.84
Aluminum Cans	per pound	.73	.75	.74	.75	.78
Al/Cu Radiators	per pound	1.75	1.77	1.81	1.87	1.97
Aluminum Radiators	per pound	.59	.60	.62	.61	.63
Heater Cores	per pound	1.48	1.53	1.55	1.59	1.60
Stainless Steel	per pound	.62	.63	.65	.68	.71

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

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Adjective for metal is metallic, but not so for iron which is ironic.

METALS

Finished import market share estimated at 22 percent in March

Based on the Commerce Department's most recent Steel Import Monitoring and Analysis (SIMA) data, the American Iron and Steel Institute (AISI) reported that steel import permit applications for the month of March totaled 2,705,000 net tons (NT). This was a 23.1 percent increase from the 2,198,000 permit tons recorded in February and an 18.2 percent increase from the February final imports total of 2,289,000. Import permit tonnage for finished steel in March was 1,943,000, up 11.1 percent from the final imports total of 1,749,000 in February. For the first three months of 2023 (including March SIMA permits and February final imports), total and finished steel imports were 7,603,000 NT and 5,693,000 NT, down 10.4 percent and 14.0 percent, respectively, from the same period in 2022. The estimated finished steel import market share in March was 22 percent and 23 percent year-to-date.

Steel imports with large increases in March permits vs. February final imports

include tin free steel (up 97 percent), cut lengths plates (60 percent), tin plate (up 44 percent), ingots and billets and slabs (up 41 percent) and hot rolled sheets (up 37 percent). Products with significant year-to-date (YTD) increase vs. the same period in 2022 include oil country goods (up 61 percent), standard rails (up 48 percent), line pipe (up 39 percent), cut lengths plate (up 19 percent) and electrical sheet and strip (up 56 percent).

In March, the largest steel import permit applications were for Canada (636,000 NT, up 18 percent from February final), Brazil (509,000 NT, up 44 percent), Mexico (435,000 NT, up 14 percent), South Korea (179,000 NT, down 21 percent) and Japan (124,000 NT, up 129 percent). Through the first three months of 2023, the largest suppliers were Canada (1,767,000 NT, up 4 percent), Mexico (1,272,000 NT, down 18 percent) and Brazil (1,257,000 NT, up 27 percent).

February 2023 crude steel production

World crude steel production for the 63 countries reporting to the World Steel Association (worldsteel) was 142.4 million tonnes (Mt) in February 2023, a 1.0 percent decrease compared to February 2022.

Crude steel production by region

Africa produced 1.1 Mt in February 2023, down 11.9 percent on February 2022. Asia and Oceania produced 106.6 Mt, up 3.0 percent. The EU (27) produced 10.5 Mt, down 12.6 percent. Europe, Other produced 2.7 Mt, down 24.9 percent. The Middle East produced 3.5 Mt, up 11.5 percent. North America produced 8.3 Mt, down 5.5 percent. Russia & other CIS + Ukraine produced

6.4 Mt, down 21.3 percent. South America produced 3.2 Mt, down 3.1 percent.

Top 10 steel-producing countries

China is estimated to have produced 80.1 Mt in February 2023, up 5.6 percent on February 2022. India produced 10.0 Mt, down 1.0 percent. Japan produced 6.9 Mt, down 5.3 percent. The United States produced 6.0 Mt, down 5.3 percent. Russia is estimated to have produced 5.6 Mt, down 8.6 percent. South Korea produced 5.2 Mt, up 1.1 percent. Germany produced 3.0 Mt, down 6.9 percent. Brazil produced 2.5 Mt, down 6.7 percent. Iran is estimated to have produced 2.4 Mt, up 14.6 percent. Turkey produced 2.1 Mt, down 28.9 percent.

February steel shipments down 3.2 percent

The American Iron and Steel Institute (AISI) reported that for the month of February 2023, U.S. steel mills shipped 6,917,842 net tons, a 4.4 percent decrease from the 7,232,679 net tons shipped in February 2022. Shipments were down 3.2 percent from the 7,148,270 net tons shipped in the previous month, January 2023. Shipments year-to-date in 2023 are 14,066,112 net tons, down 6.2

percent vs. 2022 shipments of 14,990,351 net tons for two months.

A comparison of shipments year-to-date in 2023 to the first two months of 2022 shows the following changes: corrosion resistant sheet and strip, down 5 percent, cold rolled sheet, down 9 percent and hot rolled sheet, down 10 percent.

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AUTOMOTIVE

Strongest-ever pollution standards for cars and trucks proposed

The U.S. Environmental Protection Agency (EPA) proposed new federal vehicle emissions standards that will accelerate the ongoing transition to a clean vehicles future and tackle the climate crisis. The proposed standards would improve air quality for communities across the nation, especially communities that have borne the burden of polluted air. These proposals would avoid nearly 10 billion tons of CO² emissions, equivalent to more than twice the total U.S. CO₂ emissions in 2022, while saving thousands of dollars over the lives of the vehicles meeting these new standards and reduce America's reliance on approximately 20 billion barrels of oil imports.

Since 2021, the number of EV sales has tripled while the number of available models has doubled. There are over 130,000 public chargers across the country – a 40 percent increase over 2020. The private sector has also committed more than \$120 billion in domestic EV and battery investments since the Inflation Reduction Act was signed into law.

The new proposed emissions standards for light-, medium-, and heavy-duty vehicles for model year (MY) 2027 and beyond would significantly reduce climate and other harmful air pollution, unlocking significant benefits for public health, especially in communities that have borne the greatest burden of poor air quality. At the same time, the proposed standards would lower maintenance costs and deliver

significant fuel savings for drivers and truck operators.

Through 2055, EPA projects that the proposed standards would avoid nearly 10 billion tons of CO² emissions (equivalent to more than twice the total U.S. CO₂ emissions in 2022). The proposed standards would reduce other harmful air pollution and lead to fewer premature deaths and serious health effects such as hospital admissions due to respiratory and cardiovascular illnesses.

By accelerating adoption of technologies that reduce fuel and maintenance costs alongside pollution, the proposed standards would save the average consumer \$12,000 over the lifetime of a light-duty vehicle.

The proposals would reduce oil imports by approximately 20 billion barrels. Overall, EPA estimates that the benefits of the proposed standards would exceed costs by at least \$1 trillion.

Light- and Medium-Duty Vehicle Proposed Standards

The first set of proposed standards, the “Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium Duty Vehicles,” builds on EPA's existing emissions standards for passenger cars and light trucks for MYs 2023 through 2026. The proposal retains the proven regulatory design of previous EPA standards for light-duty vehicles, but leverages advances in clean car technology to further reduce climate pollution and

smog- and soot-forming emissions.

Between 2027 and 2055, the total projected net benefits of the light- and medium-duty proposal range from \$850 billion to \$1.6 trillion. The proposal is expected to avoid 7.3 billion tons of CO² emissions through 2055, equivalent to eliminating all greenhouse gas emissions from the entire U.S. transportation sector for four years and would also deliver significant health benefits by reducing fine particulate.

Along with a broad suite of available emission control technologies, the standards are designed to allow manufacturers to meet performance-based standards however works best for vehicle fleets. EPA projects the industry standards are expected to drive widespread use of filters to reduce gasoline particulate matter emissions and spur greater deployment of CO²-reducing technologies for gasoline-powered vehicles.

These standards would also accelerate the transition to electric vehicles. Depending on the compliance pathways manufacturers select to meet the standards, EPA projects that EVs could account for 67 percent of new light-duty vehicle sales and 46 percent of new medium-duty vehicle sales in MY 2032. The proposed MY 2032 light-duty standards are projected to result in a 56 percent reduction in projected fleet average greenhouse gas emissions target levels compared to the existing MY 2026 standards. The proposed MY 2032 medium-duty vehicle standards would result in

a 44 percent reduction compared to MY 2026 standards.

Heavy-duty Truck Proposed Standards

The second set of proposed standards announced – the “Greenhouse Gas Standards for Heavy-Duty Vehicles – Phase 3,” would apply to heavy-duty vocational vehicles (such as delivery trucks, refuse haulers or dump trucks, public utility trucks, transit, shuttle, school buses) and trucks typically used to haul freight. These standards would complement the criteria pollutant standards for MY 2027 and beyond heavy-duty vehicles that EPA finalized in December 2022 and represent the third phase of EPA's Clean Trucks Plan.

These “Phase 3” greenhouse gas standards maintain the flexible structure the EPA previously designed through a robust stakeholder engagement process to reflect the diverse nature of the heavy-duty industry. The standards would enable manufacturers to achieve compliance efficiently, based on the composition of their fleets.

The projected net benefits of the heavy-duty proposal range from \$180 billion to \$320 billion. The proposal is projected to avoid 1.8 billion tons of CO² through 2055, equivalent to eliminating all greenhouse gas emissions from the entire U.S. transportation sector for an entire year, and deliver additional health benefits by reducing other pollutants from these vehicles.

See POLLUTION STANDARDS, Page A13

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RUBBER

EGLE awards \$2,037,771 for scrap tire market development

The Michigan Department of Environment, Great Lakes and Energy (EGLE) announced the funding of more than \$2 million in grants to develop new markets for used vehicle tires. When illegal dumping in the environment occurs, scrap tires pose both a fire hazard and a human health risk as a mosquito breeding ground.

These scrap tire grants support building sustainable markets for recycled tire materials in Michigan. Grants have traditionally included support for essential equipment and materials that aid in the establishment of new markets, including various manufacturing processes, implementation and testing of paving materials, energy generation, and other innovative approaches.

These grants also contribute to a more sustainable business model for the scrap tire industry through increased market opportunities for scrap tire processors, end users, and manufacturers. The 2023 funding will be used to support the following projects:

- Cobalt Holdings, LLC (Cobalt), \$573,530: Cobalt will purchase equipment for processing oversized off-the-road tires (OTR). These are tires larger than for a passenger vehicle or semi-truck. In addition, equipment for making finished products, including agricultural mats, will be purchased. This equipment will allow Cobalt to process OTR, which is needed in Michigan, and make a product with the crumb rubber. The addition of agricultural mat production in the Midwest is also beneficial with current shipping costs.

- Porous Pavement, \$60,000: The grant will provide 50 percent of the funding for installation of a rock washing system, and additional funding of \$30,000 for Porous Pavement/HydroBlox installation development and testing. HydroBlox and Goodwill Industries of West Michigan, Inc. (Goodwill), are working in partnership. Goodwill locations in Michigan will provide recyclable plastic materials, and HydroBlox will be produced in West Michigan. Porous Pavement and HydroBlox used in combination will

begin addressing many drainage issues at sites across the state.

- Michigan Technological University (MTU)-Dixie Highway, \$418,814: MTU will work with the Saginaw County Road Commission to rehabilitate 2.3 miles of Dixie Highway with a dry process rubber modified asphalt overlay, which includes the use of a rubberized Stress Absorbing Membrane Interlayer (SAMI). The existing concrete pavement surface is 80 years old. An additional six miles of the project will be used as a control comparison section.

- Michigan Technological University-Midland Road, \$482,549: MTU will work with the Bay County Road Commission to pave a one-mile section of Midland Road in Bay County utilizing dry process rubber technology. Midland Road is being upgraded in preparation for the upcoming U.S. 10 repaving.

- Ingham County Road Department (ICRD), \$37,931: This grant helps to fund an ICRD road rehabilitation project on Fitchburg Road (from Parman Road to 4,000 feet west), including installation of approximately 5,510 cubic yards of tire derived aggregate (TDA) in a 750-foot span of the project. Use of the TDA as lightweight fill over deficient subgrade soils will utilize approximately 250,000 passenger tire equivalents. The project will be funded with \$37,931 from fiscal year 2023 Market Development Grant funds and a scope change for an ICRD Market Development Grant project funded in 2021 that could not be completed due to supply chain issues (FY 2021 grant funding of \$450,000). Total amount granted for completion of the project is \$487,931.

- Rubber modified chip seal, \$464,947: Two projects for a total of 32 lane miles are being funded to expand the use of rubber modified chip seal throughout Michigan.

- Bay County Road Commission: 16 lane miles, \$208,947

- Joseph County Road Commission: 16 lane miles, \$256,000

Pollution Standards

■ Continued from Page A12

Investing in America's Clean Transportation Future

The proposed standards align with commitments made by automakers and U.S. as they plan to accelerate clean vehicle technologies in light- and medium-duty fleets in the next 10 to 15 years. Car and truck companies will also offer an increasing diversity of clean vehicles to consumers.

These developments are bolstered by investments in America, which provide unprecedented resources to support development for clean vehicle technologies and associated infrastructure and represent significant investment in expanding the manufacture, sale, and use of zero-emission vehicles. As these technologies advance, battery costs continue to decline and consumer interest in electric vehicles

continues to grow. President Biden's legislative accomplishments are also supporting critical generation of clean electricity and production of clean hydrogen needed to decarbonize transportation. EPA considered this rapid innovation in its assessment that tighter emissions standards are feasible.

EPA proposals are informed by robust and inclusive stakeholder engagement with industry, labor, advocates, and community leaders. The Proposals will be published in the Federal Register and available for public review and comment. The agency will continue to engage the public and all interested stakeholders as part of regulatory development.

Proposed Rule: Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles – Phase 3

Proposed Rule: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles.

Bridgestone develops tire using 75 percent recycled materials

Bridgestone Americas has produced a run of demonstration tires made with 75 percent recycled and renewable materials, including synthetic rubber made with recycled plastics and natural rubber harvested from desert shrubs grown domestically, in the Arizona desert.

The company has completed production of 200 demonstration tires and is pursuing joint evaluation with automakers for use on the next generation of electrified SUVs and crossovers.

Designed and engineered at Bridgestone's Americas Technology Center in Akron, Ohio, the new tires were produced at the company's Aiken County Passenger/Light Truck Radial Tire Plant in Graniteville, South Carolina. The Aiken plant is the first tire manufacturing facility in America to earn the International Sustainability and Carbon Certification (ISCC) Plus certification for transparency and traceability of sustainable raw materials including bio, bio-circular and circular-based material. Aiken also operates an on-site eight acre solar array that provides renewable energy to aid in powering the plant's manufacturing operations.

"As we progress in our transformation to a sustainable solutions company, we are making incredible progress in the use of recycled and renewable materials to bring sustainable tire technology from

the drawing board to the driveway," said Paolo Ferrari, president and chief executive officer of Bridgestone. "The production and deployment of a 75 percent recycled and renewable materials tire technology marks a significant milestone as we accelerate our progress toward using fully sustainable materials in our products by 2050."

Seventy-five percent and renewable materials

The tires contain a multitude of materials derived from recycled and biobased feedstocks. These include recycled monomer, produced with recycled materials including plastic bottles, to create the synthetic rubber in the tire as well as recycled steel, recycled carbon black, TPO-derived carbon black and bio-based carbon black. Multiple materials are ISCC Plus certified.

The new tire is the first street tire to utilize natural rubber derived from the guayule desert shrub cultivated at Bridgestone's guayule R&D agricultural facility in Eloy, Arizona. Bridgestone has spent more than 10 years and over \$100 million on the R&D of guayule as an alternative to imported natural rubber. Guayule can serve as an alternative to existing crops, such as alfalfa and cotton, in America's drought-stricken desert southwest, requiring as little as half the water to cultivate.

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BUSINESS BRIEFS

Sweet Manufacturing Company names new sales manager

■ Sweet Manufacturing has appointed James Davidson as sales manager. Davidson will manage, track and grow U.S. markets and be accountable for reaching yearly sales goals and business consistency. He will proactively establish domestic dealers and resale representatives, effectively execute sales department guidelines and policies, and propose/implement lean initiatives.

Davidson is a familiar face at Sweet Manufacturing, having served in the sales department since 2012. He started as a customer service specialist, assisting their dealers with part sales, internal sales support, and work order entry. Shortly afterwards, he was promoted to sales associate due to his experience configuring bucket elevators in the industrial and agricultural industries. Davidson's experience and expertise continued to grow. In 2019, he became a senior sales associate and managed all the west territory sales and dealers. Likewise, he led in revising, updating, and implementing new sales department policies in the company's quality management system. He also played an essential role in developing their new Bucket Elevator "Quality Line" series.

Avis recycling & waste equipment division updates organization

■ The recycling and waste equipment division of Avis Industrial Corporation announced two key additions to the organization and they continue to bring American Baler Company, Harris Waste Management Group and International Baler Corporation more closely together.

Mary Murphy has been named vice president, manufacturing and supply chain, responsible for standardizing and streamlining activities across four manufacturing locations and three procurement organizations by leveraging the capabilities and scope of the combined divisional organization.

Murphy joins the division after 20 years with WestRock with leadership experience in operations and risk management. Murphy most recently served as the president and general manager of Seven Hill Paperboard mill in Lynchburg, Virginia.

Gordon Hill has been named the vice president of commercial operations responsible for developing a unified go to market strategy encompassing the vast product offerings across the three baler companies. Hill has been a part of the Avis family of companies for the past two years as the president and general manager of Pacific Forge based in Fontana, California. Hill brings over 30 years of site operations and general business management experience with a track record for sales growth through effective product line profitability and brand repositioning.

Mecalac hires after sales manager and controller

■ Mecalac North America, the distributor for Mecalac compact construction equipment, has hired Amer Ascic as after sales manager and Diana Lacaire as controller. In their respective roles, Ascic and Lacaire will help streamline processes both internally and externally. This boost in efficiency and experience will serve dealers, customers and other industry partners as Mecalac continues to expand its presence in North America.

Ascic spent more than 20 years working at Caterpillar dealers across the U.S. and Europe in a wide range of positions, providing a broad base of knowledge and understanding of compact equipment and its applications. He also worked as a service manager for a Mecalac dealer in the U.S. With his breadth of knowledge surrounding the industry, the Mecalac brand and product line, paired with a familiarity of the challenges that dealers face, Ascic offers a new depth of partnership to Mecalac dealers and end-users.

In his new role, Ascic's primary responsibility is providing after-sales support to Mecalac dealers, such as assessing their needs for training, support and other resources to ensure customers receive well-rounded service before, during and after a sale. As Mecalac North America adds new dealers in 2023, Ascic will be responsible for a smooth onboarding process on the technical side of the business.

Lacaire brings more than 30 years of accounting experience to her new role as controller, offering valuable insight into streamlining internal processes and analyzing business data. This data and insight will help to guide business decisions as Mecalac approaches its 50th anniversary as a company and six years in North America.

In her previous role, Lacaire successfully oversaw the integration of three companies into one unit, streamlining and standardizing processes and rules. She built on the success by documenting and adding policies and procedures to grow the company and drive efficiency both internally and externally.

Waste Pro promotes Rick Chancey to division vice president

■ Waste Pro has promoted company veteran Rick Chancey to division vice president of the company's Coastal Region. Chancey, who previously served as division manager of Waste Pro's Milton Division will now oversee operations in Milton, Tallahassee, and Crestview – totaling more than 220,000 customers.

Chancey's 30 plus-year career in solid waste began in 1990 when he was fortunate to learn the business as a residential collection truck driver. He has been a longtime Waste Pro employee serving in division manager roles in Mississippi, Alabama, and Florida.

Sims Metal acquires Northeast Metal Traders

■ Sims Metal, a leader in metal recycling, will acquire the commercial and operating assets of Pennsylvania-based Northeast Metal Traders (NEMT).

NEMT, a non ferrous scrap metal wholesaler and broker, operates a single-scale site in Philadelphia and has extensive supplier and end-consumer relationships that stretch across the eastern U.S. NEMT is one of the largest copper recyclers in the U.S. They process and sell approximately 60,000 tons of non ferrous metal per year.

The transaction consideration implies an EV/EBITDA multiple of 4.8x on a pre-synergies basis (including estimated working capital).

The NEMT acquisition is in line with the company's growth strategy, which includes the expansion of the non ferrous business in North America (Sims Metal North America), and the allocation of growth capital expenditure toward assets that yield a minimum post-tax internal rate of return (IRR) of 15 percent.

Furthermore, it meets the core strategic elements of the merger and acquisition framework – targeting businesses with operations in large markets and producing high-quality differentiated outputs. Disciplined capital allocation remains a focus for the business, and Sims Metal intends to fund this acquisition through recycling surplus and/or underperforming capital.

This acquisition will substantially increase the copper volumes in the metal business, as the Northeast focuses predominantly on high-quality copper granulation. Furthermore, with the demand for copper scrap growing rapidly, it will strengthen Sims Metal's exposure to the energy transition and decarbonization.

Schupan names new vice president of market development

■ Schupan has appointed Toby Alexander as vice president of market development effective immediately.

In this newly-formed position, Alexander will use his 25 years of experience in the aluminum industry to help connect the commercial activity of Schupan's various business units with the best potential markets and work with 3rd party value-added processors to ensure metal flows through the supply chain efficiently & profitably. Alexander will report to Schupan Materials Trading president, Andy McKee.

Alexander most recently served as senior metal trader with Commonwealth Rolled Products in Lewisport, Kentucky (formerly Aleris) for 15 years.

Schupan is a third-generation, family-owned metals and plastics business specializing in industrial and electronics recycling, asset management, fabrication and distribution, beverage container processing, sustainability services, and materials trading with fifteen facilities throughout Michigan, Ohio, Iowa, and Indiana.

VLS Environmental Solutions names Kris Terrill as chief financial officer

■ VLS Environmental Solutions, LLC, a Houston-based environmental services company, and a portfolio company of I Squared Capital, announced the appointment of Kris Terrill as the chief financial officer (CFO).

As CFO, Terrill will lead the organization's financial activities including accounting, controllership, financial planning and analysis, tax, investor relations, financial audits, capital markets and investments, and will be instrumental in assisting M&A strategy.

Terrill's experience spans multiple senior roles. Prior to taking the position at VLS, Terrill was the CFO of FlexSteel Technologies, a business generating revenue of approximately \$350 million a year when it was acquired by Cactus, Inc. in February 2023. He was also the director of Investments for Prime NRI, an investment holding company backed by one of the largest financial institutions based in New York. He also served as the CFO of a directional drilling company, an investment banker with Simmons & Company and a Field Artillery Officer in the U.S. Army.

KAR Global names chairman of the board

■ KAR Auction Services, Inc. d/b/a KAR Global, an operator of digital marketplaces for wholesale used vehicles, announces the retirement of executive chairman Jim Hallett. Hallett retains his seat on KAR's board of directors while stepping down from his roles as executive chairman for KAR and chairman of the board of directors. Michael Kestner, who has served as lead independent director since 2019, has been named chairman of KAR's board effective April 1, 2023, and Peter Kelly continues to serve as KAR's chief executive officer.

Hallett's tenure with the company spans more than 25 years. He was appointed executive chairman of KAR in 2021 after leading the company as chief executive officer since 2009 and chairman of the board since 2014. Hallett joined the company in 1993 as president of ADESA Canada. He became chief executive officer of ADESA in 1996 and led the company's IPO in 2004. In 2007, Hallett architected the leveraged buyout of ADESA and merger with salvage auction provider Insurance Auto Auctions, Inc. Hallett took the combined company public in 2009, and in 2019 led the successful spin-off of IAA, which generated significant value for KAR stockholders. Under Hallett's leadership, KAR completed the acquisition of more than 50 wholesale auctions and other businesses, expanding the company across North America and Europe.

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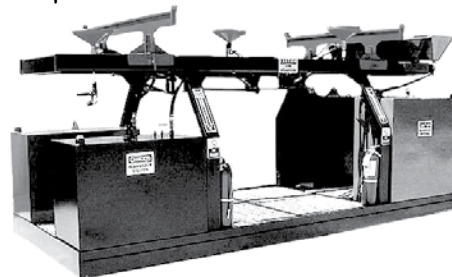
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SECTION B

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MAY 2023

The challenge of today's plastics in recycling

by MAURA KELLER

mkeller@americanrecycler.com

Plastic recycling comes with its fair share of challenges. Look around the sorting equipment in any recycling facility and you are bound to see a myriad of plastics types – some of which are recyclable, and others which are not. Plastics have long been a challenge for the recycling industry – from educating consumers on the recyclability of certain plastics to working with manufacturers to produce plastic end products that streamline the efficiency of plastic recycling.

As Manav Lahoti, global sustainability director at Dow explained, delivering circularity for hard-to-recycle plastics is a complex challenge as only two percent of U.S. households have access to curbside film and flexible plastics recycling, while demand for plastics is on track to triple by 2060.

“Under traditional methods, hard-to-recycle plastics such as mixed-polymer waste streams, medical grade plastic film, single-use food film packaging, and plastic waste that has degraded, cannot be processed through mechanical recycling techniques,” Lahoti said.

Craig Cookson, senior director, plastics sustainability at American Chemistry Council (ACC) further explained, some plastics, such as beverage bottles, milk jugs and detergent bottles, are easy for recycling facilities to sort and aggregate, and those plastics have solid and stable end markets.

“Historically, however, the challenge has been to collect, sort and find end markets for many of the non-bottle plastics,” Cookson said. “These include plastics such as films that are wrapped around paper towels and toilet paper, pouches containing snack mix or granola, and tubes containing hand cream or toothpaste.”

In 2018, Americas Plastics Makers committed to a goal that 100 percent of U.S. plastics packaging and foodservice would be recycled or recovered by 2040. To help accomplish this, the American Chemistry Council developed its Roadmap to Reuse, which recognizes that



Plastic film is not accepted in the vast majority of curbside recycling programs.

Photo by Karina Tess on Unsplash

achieving this goal requires both supply and demand interventions.

“For the challenging task of collecting, sorting and pre-processing non-bottle plastics, ACC believes that enhanced networks of secondary sortation are critical to achieving success,” Cookson said. “And, according to a November 2022 McKinsey report, there is tremendous opportunity to create secondary sorting facilities that can ‘aggregate and upgrade’ used plastics to increase their quality for recyclers, especially advanced recyclers. Fixing this missing link would spur growth in the types and amounts of plastic recycled.”

Cookson also pointed to the newly formed Houston Recycling Collaboration, which is an example of a public-private partnership that plans to raise the bar for modern recycling systems. Traditionally, only about 10 percent of plastics can be recycled by mechanical methods. To change that paradigm, Houston plans to enable residents to recycle all plastics as new technologies are put in place to sort and process them. According to the program website, “This new collaboration

between government, industry and the community aims to significantly increase Houston’s plastics recycling rate and help establish the city as a leader for both mechanical and advanced recycling processes.”

“Additionally, Waste Management and Dow announced they’re teaming up to allow communities to recycle plastic film at curbside, instead of store drop off,” Cookson said. “Curbside recycling could dramatically increase participation in recycling of plastic film, one of the fastest growing use of plastics.”

Finally, ACC supports producer responsibility programs that are tailored to domestic needs and circumstances, which will help fund the basic access and collection infrastructure – for plastics and all materials – as well as enhance outreach and education to inform Americans on how to recycle better.

“We also support development of national standards, as we like to say with some hyperbole that there are 9,000 recycling jurisdictions in this country doing 9,000 different things, and thus the lack of standardization creates

confusion and makes it very difficult to scale plastics recycling to where we need it,” Cookson said.

Recycling Approaches Being Taken

To evolve and tackle these interconnected challenges, Lahoti further said that the industry needs to embrace a suite of recycling solutions, including mechanical and advanced recycling, as well as hybrid recycling processes.

For example, advanced recycling is one key element to growing the supply of post-consumer recycled plastics. That’s why Dow recently expanded its Mura technologies partnership to build Europe’s largest advanced recycling facility.

“This partnership will accelerate the circular plastics economy by utilizing advanced recycling technology to process hard-to-recycle plastics such as multi-layer flexible plastics, often used in food packaging,” Lahoti said. “Advanced recycling technology unlocks previously inaccessible PCR plastic feedstocks that we can use to generate a wide variety of

See PLASTICS IN RECYCLING, Page B6

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Mount Prospect starts foam recycling program

The Village of Mount Prospect, Illinois, received a \$50,000 grant from the Foodservice Packaging Institute's Foam Recycling Coalition (FRC) that enables residents to recycle materials, such as foam polystyrene cups, plates, bowls, clamshells, egg cartons and meat trays, as well as block packaging foam, at its local drop-off center.

The FRC grant assisted with funding the purchase and installation of a foam densifier at the Mount Prospect Public Works facility. Densifiers are used to compact foam products into foam blocks or ingots. Mount Prospect sells the foam ingots to local end markets to be manufactured into architectural moldings and picture frames.

Mount Prospect is a member of the Solid Waste Agency of Northern Cook County (SWANCC), an intergovernmental agency comprised of 23 communities. The drop-off center is open to all communities within SWANCC.

"We are continually reflecting on our programs to ensure the residents of Mount Prospect are provided with the most economical and ecologically sound options," said Sean P. Dorsey, director at Mount Prospect Public Works Department. "The inclusion of foam recycling to existing recycling programs will be extremely beneficial to the Mount Prospect and SWANCC member communities."

The Village and SWANCC will inform residents via communications including Mount Prospect and SWANCC websites, Recycling Coach app, social media, newsletters and flyers.

"Mount Prospect is spearheading this effort that provides residents of the Village and surrounding communities the ability to recycle foam polystyrene that otherwise would have gone to the landfill," said Natha Dempsey, president of the Foodservice Packaging Institute. "FPI and the Foam Recycling Coalition are excited to support communities like Mount Prospect that are shining examples of providing environmentally sound and resourceful options to its residents."

FRC has opened the 2023 application period, for public and private entities seeking to start or improve foam polystyrene recovery in their recycling programs. Eligible entities must engage in operating a material recovery facility, manage residential curbside recycling programs, or manage a drop-off or convenience site recycling program.

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.

Mount Prospect is the 29th grant recipient to receive this funding since 2015. Over 10 million additional residents in the U.S. and Canada can recycle foam polystyrene because of FRC grants.



Foam Cycle is the first and patent-pending Foam Packaging (aka Styrofoam) recycling system for all types of materials, especially waste plastics.

Investments lead to growth in EU plastic recycling capacity

Installed plastic recycling capacity has grown by 17 percent in 2021 in EU27+3, boosted by an estimated €1.75 billion investment. Despite the recent challenges that the industry has faced, the commitment of recyclers to drive the transition toward a circular plastic future remains strong.

"In recent years, European plastics recyclers have experienced many challenges. However, with the increased advancements in legislation, stemming from the implementation of the Plastics Strategy and the Single-Use Plastics Directive, the recycling industry has weathered the crisis showing its resiliency to external factors," said Ton Emans, PRE president. "The positive growth we can observe today will shape and further strengthen the market for recycled plastics towards meeting the EU targets", he adds.

With more than 730 recycling sites, the total capacity in EU27+3 now stands at 11.3 million tonnes. This shows that the plastic recycling sector is an important employment generator with more than 30,000 persons across Europe, and with €8.7 billion in turnover it contributes substantially to the socio-economic welfare in the region.

In terms of the polymers split, more than 3/4 of the total share is covered by flexible PE & PP, PET and rigid PE & PP. These streams showed the highest increase, compared to 2020. When it comes to rigid polyolefins, nearly half of the recycling capacity is dedicated to the household stream. For flexible PE & PP, half of the capacity is for commercial waste.

Germany, Spain, Italy, United Kingdom and France are the countries with the highest installed capacities, representing 2/3 of the total market. Furthermore, countries with notable growth are Poland and the Netherlands.

Increased investments and new capacities have created a strong foundation for the circular economy transition for plastics. To further build on that, a coherent legislative framework and its thorough implementation are critical, as it is one of the most important factors contributing to the unprecedented demand for recycled materials. This transition will be further accelerated due to the newly released proposal for the Packaging and Packaging Waste Regulation, which calls for a comprehensive, EU-wide assessment scheme for design for recycling and sets specific recycled content targets.

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Plastic recycling volumes recover from pre-pandemic levels

Recyclers acquired more than five billion pounds of post-consumer plastic recovered for recycling in the U.S. in 2021, an increase of 280.3 million pounds compared to 2020 volumes, according to a new report released by the Association of Plastic Recyclers (APR), The Institute of Scrap Recycling Industries (ISRI), and the U.S. Plastics Pact. Partial funding for the report was also provided by The Recycling Partnership. Prepared by Stina Inc, and based on surveys conducted by Stina and the National Association for PET Container Resources (NAPCOR), the 2021 U.S. Post-consumer Plastic Recycling Data Report details U.S.-sourced post-consumer plastic recovered for recycling.

The increase in 2021 volumes recovered for recycling in the U.S. show that all major categories of plastic recovered for recycling had a net increase in total pounds reported in 2021 compared to 2020, specifically bottles, non-bottle rigids and film categories. Within those broader categories, there was a slight decline in recovery of high-density polyethylene (HDPE) bottles and polypropylene (PP).

The 2021 report also indicates that the vast majority of plastics recovered are being recycled in North America, primarily by U.S. reclaimers. North American plastic reclaimers acquired a total of 4,693 million pounds, or 92.3 percent, with 391 million pounds, or 7.7 percent of plastic recovered for recycling bound for overseas export markets.

“The 2021 rate report shows the strength of the recycling industry as they face ongoing challenges including competition with low disposal costs, collection rates, and virgin resin prices,” said Steve Alexander, APR president & chief executive officer. “APR works with companies to increase yields and supply by ensuring plastic packaging is designed for recyclability through the APR Design® Guide and other programs, but in order to see bigger increases, there’s a need for systematic change led by public policy to drive collection, improve sortation and stabilize demand for recycled resins. APR is supportive of Extended Producer Responsibility (EPR) laws and recycled postconsumer content requirements recently enacted in several states. APR also supports a national bottle bill and other federal legislation that can drive change through a combination of supply and demand policies, targeted funding and incentives, as well as streamlined collection programs.”

The 2021 Report shows that the five billion pounds of materials recovered in 2021 includes bottles (2,886.7 million pounds and 56.8 percent of total); non-bottle rigids (1,071 million pounds and 21.1 percent of total), film (1,106.2 million pounds and 21.8 percent of total) and “other plastics” (20.2 million and 0.4 percent of total).

“The recycled materials industry is doing more than ever to ensure that at the end of a product’s life, less material goes to waste,” said ISRI president Robin

Wiener. “Our goal is to make the supply chain ever more sustainable by providing manufacturers with high-quality material and reducing the need to extract natural resources to make new products we rely on every day.”

The net bottle increase of 142.5 million pounds in 2021 was primarily due to the increase in PET bottle volumes recovered for recycling. This was offset by declines in the valuable natural HDPE commodity market (e.g., recycled milk jugs). Non-bottle rigids were up slightly from 2021, primarily due to increases in HDPE and PET non-bottle materials recovered for recycling, for a net 13.6-million-pound increase. Also contributing to the 2021 increase was an additional 120.5 million pounds in film recovery from 2020 volumes, primarily in polyethylene (PE) mixed color film.

“The U.S. Plastics Pact is working to raise the quality and quantity of post-consumer recycled plastics, particularly for PET and HDPE packaging, which make up the largest tonnages of packaging represented by our members,” said U.S. Plastics Pact executive director Emily Tipaldo. “If we expect to achieve true recyclability, we need high demand for recycled plastics. Achieving true recyclability, as well as using higher percentages of PCR requires significantly greater tonnages of recycled plastics. The U.S. Pact is glad to see increases in the amount of plastic recovered for recycling and that the majority of the plastic is being recycled in North America.”

New manufacturers to enact advanced recycling legislation

Kansas Gov. Laura Kelly (D) signed into law bipartisan legislation establishing that advanced recycling operations are properly regulated as manufacturing facilities. These innovative recycling operations enable hard-to-recycle plastics to be remade into valuable new plastics.

“This bill clears the path for Kansas to be a leader in the circular economy. In addition to boosting tax revenue from business investments, it will bring good-paying green-collar jobs to our residents and reduce plastic waste from ending up in landfills,” said Sen. Renee Erickson, assistant majority leader.

The potential economic impact of advanced recycling and recovery in Kansas is considerable—an additional \$144 million in activity could support as many as 550 jobs in local communities.

Advanced recycling technologies are transforming hard-to-recycle plastics and reducing reliance on natural resources for new plastic production. This manufacturing process extracts value from used plastics by converting them into their original building blocks for use in new plastics and chemical products. Advanced recycling complements existing recycling processes and reduces the amount of waste sent to landfills while generating a diverse range of marketable products.

These technologies remain subject to all applicable federal, state and local environmental regulations, and SB 114 establishes a regulatory framework for advanced recycling and recovery facilities to encourage potential future investment in Kansas.



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EQUIPMENT SPOTLIGHT

Sorting Systems

by MARY M. THORNTON

maryt@americanrecycler.com

A 2022 study published by the environmental advocacy group Greenpeace noted that of the 51 million tons of U.S. plastic waste generated in 2021, only about 5 percent of it was recycled. Globally, the drive for greater plastics circularity and to maximize resource use is a topic of concern. Plastics are durable, efficient and convenient, making them beneficial to both consumers and businesses. As brand owners look to increase the share of recycled content, they are met with a new set of challenges – effectively sourcing feedstock from post-consumer and post-industrial waste. Ultimately, plastic sorting equipment must be used in the recycling process and the options involved are plentiful.

Action Equipment Company is dedicated to the design, manufacture and installation of vibratory equipment for the efficient processing of bulk materials. A key product for sorting is the Dense-Out® vibratory air separator, a rugged vibratory air knife. The conveyor uses air to separate “heavies” from “lights” when processing items such as plastic and paper from glass. The unit can be configured with single or multiple air knives, depending on the level of separation required. An optional Dense-Out addition adds a Taper-Slot® rugged, finger screen at the unit in-feed, which sorts fines from the stream. This product is popular in settings such as recycling, construction and demolition (C&D), glass cleaning, aggregate cleaning, removing rocks from biomass/hog fuel and auto shredder residue clean up.

“Action has always been innovative in bringing vibratory equipment to the next level. As a vibratory equipment



Machinex

leader since 1972, our commitment is to never settle and bring better solutions to a technology that has been around for decades,” president Andrew LaVeine explained. The firm’s Sub-Pan Free™ Dense-Out/Taper-Slot screen eliminates the sub pan under the screens. The product eliminates one additional, large surface area which could attract wet and sticky material. Instead, screened materials drop directly into a bunker or onto a takeaway conveyor. For many customers that handle problematic materials, this option reduces maintenance and cleaning time.

Rusty Angel, eastern region sales manager at Machinex, stated, “As the plastic recycling market is prone to significant fluctuations, a reliable sorting system that consistently produces high-purity materials is crucial. At Machinex, we understand that a purer end product translates into greater

profitability. As such, we have incorporated the best sorting technologies available in the design of our plastics processing systems to achieve this goal.”

Regardless of the source (post-industrial, post-consumer, residential, or commercial collection) or grade of plastics, Machinex offers bottle grade optical sorting by type and color, magnets for removing ferrous, eddy currents for nonferrous items, and fine screens. Customized systems to incorporate shredders, granulators, and bale breakers are also available, Machinex’s MACH Hyspec® optical sorter offers accuracy and capacity to efficiently sort plastics by grade (PET, HDPE, PVC, LDPE, PP, PS, etc.) and color. Optical sorters can dramatically improve the purity of a given grade by sorting out the desired grade (or the non-desired grade(s)) from an inbound stream that may be contaminated. Purity levels of 95 to 98 percent are easily achievable with the use MACH Hyspec sorters.

With over 50 years of experience, Machinex experts have designed and installed hundreds of turnkey facilities in partnership with leading MRFs in Canada, the U.S., Europe and Oceania. The first company in Canada to design machinery for material recycling facilities in the ‘80s, Machinex continues to develop cutting-edge sorting, waste management, and recycling technology.

The TOMRA Autosort™ features an ultra-compact design with a versatile sensor-based configuration that can



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See SORTING SYSTEMS, Page B5

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Sorting Systems

Continued from Page B4

be used across a vast range of material sorting applications – including single stream, municipal solid waste, and commercial & industrial waste. “Compact, highly flexible and upgradable, Autosort brings together the industry’s broadest range of sensors, which can help mitigate feedstock supply and quality challenges. Using data to classify objects, the machine is capable of separating materials which are difficult, or even impossible to separate using conventional technologies,” said Ty Rhoad, regional director, Americas.

TOMRA’s Sharp Eye technology increases the light efficiency while maintaining the same energy consumption to enhance sorting sharpness and improves the separation of difficult to target fractions. Autosort also features TOMRA’s unique and patented advanced flying beam technology, which delivers enhanced light signal efficiency for improved detection at low operating costs. The integration of sharp eye and flying beam technology allows Autosort to consistently deliver high performance in terms of sorting accuracy across all target fractions – even in the most complex of applications.



TOMRA

Optional technologies include deep laiser, noted for its compactness and flexible range of uses. Its object recognition enables a deeper sorting sharpness to significantly improve the performance of the sorting process. It detects previously undetectable objects like black polymers and glass. Also available, GAIN uses a deep, learning-based sensor to classify objects and sort previously hard-to-sort

objects. It resolves complex sorting tasks and achieves high purity levels without compromising throughput speed.

TOMRA Recycling designs and manufactures sensor-based sorting technologies for the global recycling and waste management industry. Over 8,200 systems have been installed in more than 100 countries worldwide.



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EPA releases draft strategy to combat plastic waste

The U.S. Environmental Protection Agency (EPA) released the draft “National Strategy to Prevent Plastic Pollution” for public comment, a significant step forward to reduce pollution and build a circular economy for all. EPA’s draft strategy includes ambitious actions to eliminate the release of plastic and other waste from land-based sources into the environment by 2040.

The EPA’s draft national strategy was released alongside a new White House Interagency Policy Committee (IPC) on Plastic Pollution and a Circular Economy. The IPC will coordinate federal efforts on plastic pollution, prioritizing public health, economic development, environmental justice, and equity to ensure that the benefits of acting on plastic pollution – including jobs, minimized exposure to harmful chemicals, and clean communities – are available to all.

In the last 20 years, global annual production of plastics and plastic waste has more than doubled. As a result, communities face pollution not only from the manufacture and transportation of plastic and associated chemicals, but from the millions of tons of plastic products that end up in waste streams and “leak” into parks, neighborhoods, waterways and oceans. Products that range from

shopping bags and takeout food containers to beverage bottles, food wrappers, bottle caps, and much more can be found in the environment.

Working closely with industry leaders and additional stakeholders, EPA identified three key objectives for the strategy:

- Objective A: Reduce pollution during plastic production.
- Objective B: Improve post-use materials management.
- Objective C: Prevent trash and micro/nanoplastics from entering waterways and remove escaped trash from the environment.

The draft “National Strategy to Prevent Plastic Pollution,” together with EPA’s “National Recycling Strategy,” identifies how the agency can work collaboratively with U.S. organizations to prevent plastic pollution and reduce, reuse, recycle, and capture plastic and other waste from land-based sources. These actions support a circular approach to the management of plastics – one that is regenerative by design, enables resources to maintain their highest value for as long as possible, and aims for the elimination of waste.

Examples of actions in the draft strategy include:

- Improve the design of plastic products

for more reuse and refill opportunities.

- Increase solid waste collection and ensure that solid waste management does not adversely impact communities.
- Produce fewer single-use, unrecyclable, and frequently littered plastic products, and reduce pollution from plastic production facilities.
- Increase public awareness of ways to reduce plastic and other trash in waterways.

EPA invites public comments on the draft “National Strategy to Prevent Plastic Pollution.” EPA included specific questions in the draft report for the public and other organizations to provide feedback. EPA expects to finalize the strategy by the end of the year.

Additionally, EPA is posting public comments on the Federal Trade Commission’s request for comment on potential updates to its “Green Guides” for the use of environmental marketing claims. Marketing claims include recyclable, compostable, renewable energy, and general environmental benefit claims, among others. EPA supports strengthening requirements for environmental marketing claims and combating greenwashing, including requiring higher thresholds for plastic products and packaging to be marketed as recyclable.

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Plastics in recycling

■Continued from Page B1

sustainable plastic products. And while advanced recycling has a higher carbon footprint when compared to mechanical recycling processes, the industry is laser focused on finding ways to lower it.”

Mechanical recycling still has value and should be used as it comes with lower carbon emissions at this stage – especially when combined with advanced processes. In Africa, Lahoti shared how Dow has made significant investments in Mr. Green Africa, a certified B-Corp organization dedicated to addressing critical gaps in waste management systems and enabling more plastic waste to be sorted, collected and reused.

“This partnership is expected to make plastic waste recovery notably more efficient in a region that has extremely limited or nonexistent recycling infrastructure particularly for plastics,” Lahoti said. Mr. Green Africa processes locally collected plastic waste into high-quality PCR (post consumer recyclates), which are then sold for use in place of imported virgin plastics. PCR offers a blend of high-concentration formulation and robust high-performance resin, which provides a single pellet with enhanced performance and processability.

Another example is hybrid-recycling, which, in short, is a facility that provides mechanical and advanced processes.

“Solving problems with ‘challenging’ plastics will also require unlocking supply to make it a valued commodity,” Lahoti said. “As we all know, the material is out there but it’s going to the wrong place, incineration or landfill. Dow is working on ways to unlock or prevent waste plastic supply from leaking into the environment.”

On the demand side, Cookson said innovative technologies such as advanced recycling are needed to recycle these plastics and create new top-quality plastics from them, reducing our reliance on natural resources compared to traditional plastics manufacturing and allowing

us to remake new products from used “hard-to-recycle” plastics.

“Advanced recycling technologies can take these hard-to-recycle plastics and break them down into their basic chemical building blocks, enabling them to be remade into virgin-equivalent plastics again,” Cookson said.

Dow boasts a five-pillar strategy, starting with Design for Recyclability. During 2022, Dow demonstrated that recyclable structures were possible for 16 packaging applications in their portfolio that were previously considered unrecyclable. This represents a 30 percent transition rate compared to 2021.

“By focusing on Designing for Recyclability, we have helped to expand the boundaries of polyethylene for pet food packaging to ensure that all our mono-material PE-films meet the machinability, abuse, barrier, and shelf appeal that brand owners and consumers alike have grown accustomed to,” Lahoti said. “These mono-material flexible packaging products are much easier to recycle and have the potential to increase advanced and mechanical recycling rates significantly.”

Looking Ahead

Nearly \$7 billion in advanced recycling investments in the U.S. have been announced since 2017, showing growing commitment to recovering and remaking plastics again and again. As Cookson explained, that investment could potentially divert more than 16 billion pounds of waste from landfills each year.

“These technologies help create high-quality plastics that can meet FDA requirements for use in medical, pharmaceutical and food applications – virtually any plastic product or packaging,” Cookson said. “Finally, policymakers are also taking notice and, to date, 22 states have passed laws so that advanced recycling facilities are appropriately regulated as manufacturing operations. These laws demonstrate that policymakers want new opportunities and solutions for their constituents to be able to recycle greater amounts and more types of plastics in their communities. This feels like a transformative moment in plastics recycling. The stars are beginning to align – supply, demand, technology, and investment – and we can see a clearer path forward

to achieving our 2040 goal.”

Lahoti stressed that mechanical recycling processes will still be crucial in the fight to end plastic waste.

“However, advanced recycling is the most groundbreaking new technology in recycling, with new advancements and opportunities to scale occurring frequently,” Lahoti said. “The ability to process previously unrecyclable materials, such as hard to recycle mixed plastic waste, will greatly help to close the loop in the plastics industry to create a circular economy.”

For example, Dow is helping to increase recycling rates and build upon existing recycling infrastructure through its partnership with WM. Through the partnership and a \$1 billion investment made into local recycling infrastructure, an estimated 120,000 metric tons of plastic film per year will be diverted from landfills. WM and Dow are currently running a pilot program for curbside film and flexible plastics recycling in Hickory Hills, Illinois. The partnership plans to expand the program into other cities around the U.S.

As Lahoti explained, the program allows for curbside recycling for previously unrecoverable plastic materials such as bread bags, shrink wrap, and dry-cleaning bags.

“The WM infrastructure will manage collections and sorting, while Dow will contribute its expertise in material science and application development,” Lahoti said. “As part of its outreach efforts, Dow is working with its partners to promote recycling among residents. Part of the outreach includes examining how providing household communications impact the quality of materials recovered.”

Along with increased public education and investments in infrastructure to address existing gaps, Lahoti said stronger public policy around all aspects of the lifecycle chain for plastic also is needed to achieve a circular economy for plastics.

“The public and private sector will need to work hand-in-hand to address the unique needs of different places and the different challenges/bottlenecks in the recycling process through enacting strong recycling policies and supporting innovative advancements to infrastructure, scaling, and capabilities,” Lahoti said.

UPCOMING EVENTS

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05/01-05/04

WasteExpo

Ernest N. Morial
Convention Center
New Orleans, Louisiana
wasteexpo.com
203-358-4384

05/08-05/11

AISTech 2023

Huntington Place
Detroit, Michigan
aist.org
724-814-3000

05/21-05/24

The Federation of New York Solid Waste & Recycling Conference with Trade Show

The Sagamore
Bolton Landing, New York
nyfederation.org
518-813-5126

05/22-05/23

NRRA's 2023 Annual Northeast Recycling Conference & Expo

Grappone Center
Concord, New Hampshire
nrrarecycles.org
603-736-4401

JUNE

06/06-06/08

116th Air & Waste Management Annual Conference

Hyatt Regency Orlando
Orlando, Florida
awma.org
412-232-3444

SEPTEMBER

9/25-9/28

Missouri Recycling Association 2023 Annual Conference

DoubleTree
Chesterfield, Missouri
morconference.org
573-491-4255

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



Plastics are sent to material recovery facilities (MRFs) where they are sorted and baled.

Photo by Vivianne Lemay on Unsplash

Progress with scaling up liquefied waste plastic processing

Neste has successfully concluded its second series of industrial scale processing runs with liquefied waste plastic at its refinery in Porvoo, Finland. The goal of the processing runs is to further increase the company's understanding of how different types of waste plastics behave during chemical recycling in the refinery processes. The end product gained in the runs – Neste RE™, a drop-in feedstock for petrochemicals – is turned into new plastics by Neste's partners.

While Neste is establishing large-scale capacities to process liquefied waste plastic at its Porvoo site, the current processing runs utilize existing refinery equipment built for crude oil refining.

Since Neste's first processing run in 2020, the company has concluded a total of six successful runs, processing close to 3,000 tons of liquefied waste plastic in total. After processing 800 tons in the first series completed in 2022, the company has been able to more than triple that amount to date. The processing runs are a part of Neste's strategy to advance chemical recycling and contribute to a circular polymers economy.

"We are walking the talk on chemical recycling," said Heikki Färkkilä, vice president chemical recycling at Neste. "Our processing runs provide us not only with valuable knowledge on the technologies, but also serve as a proof of concept: chemical recycling can be done on an industrial scale. Our focus continues to be

getting from individual processing runs to continuous operation."

Neste processed so called "hard-to-recycle" waste plastic which would have ended up in incineration or landfill had it not been directed to chemical recycling. This highlights how chemical recycling complements existing mechanical recycling technologies.

The liquefied waste plastic for the runs has been sourced from multiple suppliers that are part of a supply network Neste has continuously expanded. Among others, the suppliers include U.S.-based Alterra Energy, in which Neste holds a minority stake, as well as Finland-based Wastewise, with which Neste recently cooperated to chemically recycle cross-linked polyethylene (PEX) waste from pipe production into new PEX pipes.

Neste is looking to build capacities at its Porvoo site to process 400,000 tons of liquefied waste plastic per year in the course of project PULSE, which is funded by the EU Innovation Fund. From 2030 onwards, Neste wants to process more than one million tons of waste plastic per year.

This ambitious aim is an important part of the company's strategic study to transition its Porvoo refinery into a renewable and circular solutions site and possibly end crude oil refining by the mid-2030s. Liquefied waste plastic would play an important role in replacing fossil crude oil in the company's Porvoo refinery.

Plastics Industry Association names 2023 cleanup champions

The Plastics Industry Association (PLASTICS) has announced its list of 2023 Cleanup Champions. Lead by the Future Leaders in Plastics (FLiP) Community Impact Task Group, the Cleanup Champions Initiative encourages PLASTICS' member companies to use the Guide to Planning a Litter Cleanup to carry out a cleanup in their community in 2023. Each of these companies are dedicated to making a difference in their communities by working to eliminate plastic and all material waste from the environment.

"PLASTICS and the entire plastics industry are dedicated to recycling, eliminating waste from the environment and making change for good in our local communities," said Heather Nortz, PLASTICS' sustainability and materials manager. "PLASTICS' 2023 Cleanup Champions have committed to giving back to their community and positively impacting our environment. We are excited to see what PLASTICS' 2023 Cleanup Champions will accomplish this year."

2023 Cleanup Champions:

- Advanced Blending Solutions
- Brueckner USA
- Industrial Heater Corporation
- Braskem
- Covestro
- Epsilyte
- Milliken
- Gardner Business Media
- Dart Container
- Colour Synthesis Solutions
- Placon

The Future Leaders in Plastics (FLiP) Community Impact Task Group was created in April of 2022 to foster collaboration among PLASTICS member companies and external organizations to provide an outlet for the industry to give back and positively impact the environment and communities the plastics industry serves.

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.

Consumer support of all types of recycling

A new survey released by the Plastics Industry Association (PLASTICS) indicates that consumers overwhelmingly support all types of recycling when it comes to plastic products or packaging that should be considered "recyclable" or made from "recycled material." The survey of 1,200 Americans will be submitted to the Federal Trade Commission (FTC), which is now accepting comment on potential changes to its 'Green Guides,' which are intended to provide guidance on how consumers interpret environmental marketing claims.

According to the results of the survey, two-thirds (62 percent) of Americans believe that single use plastics are important to their quality of life.

"Our goal is to build a more circular economy, and that means enabling consumers to easily find and purchase products and packaging that are designed to be recycled or made from recycled content," said Matt Seaholm, president and chief executive officer of PLASTICS. "Consumers don't discriminate against technologies like advanced recycling which enable them to recycle more of the plastic products they use. They want labels or branding to be simple and consistent and are more focused on keeping plastics in a recycling bin and out of the landfill."

Through the mechanical recycling process, plastic products are cleaned, ground into smaller pieces, and then reformed into new plastic. The advanced recycling process breaks plastic polymers down into smaller molecules that can be used to make new products, including new plastic.

According to a memo from RG Strategies, which conducted the survey in

February, "A large majority of Americans support advanced recycling and agree that advanced recycling should be considered recycling."

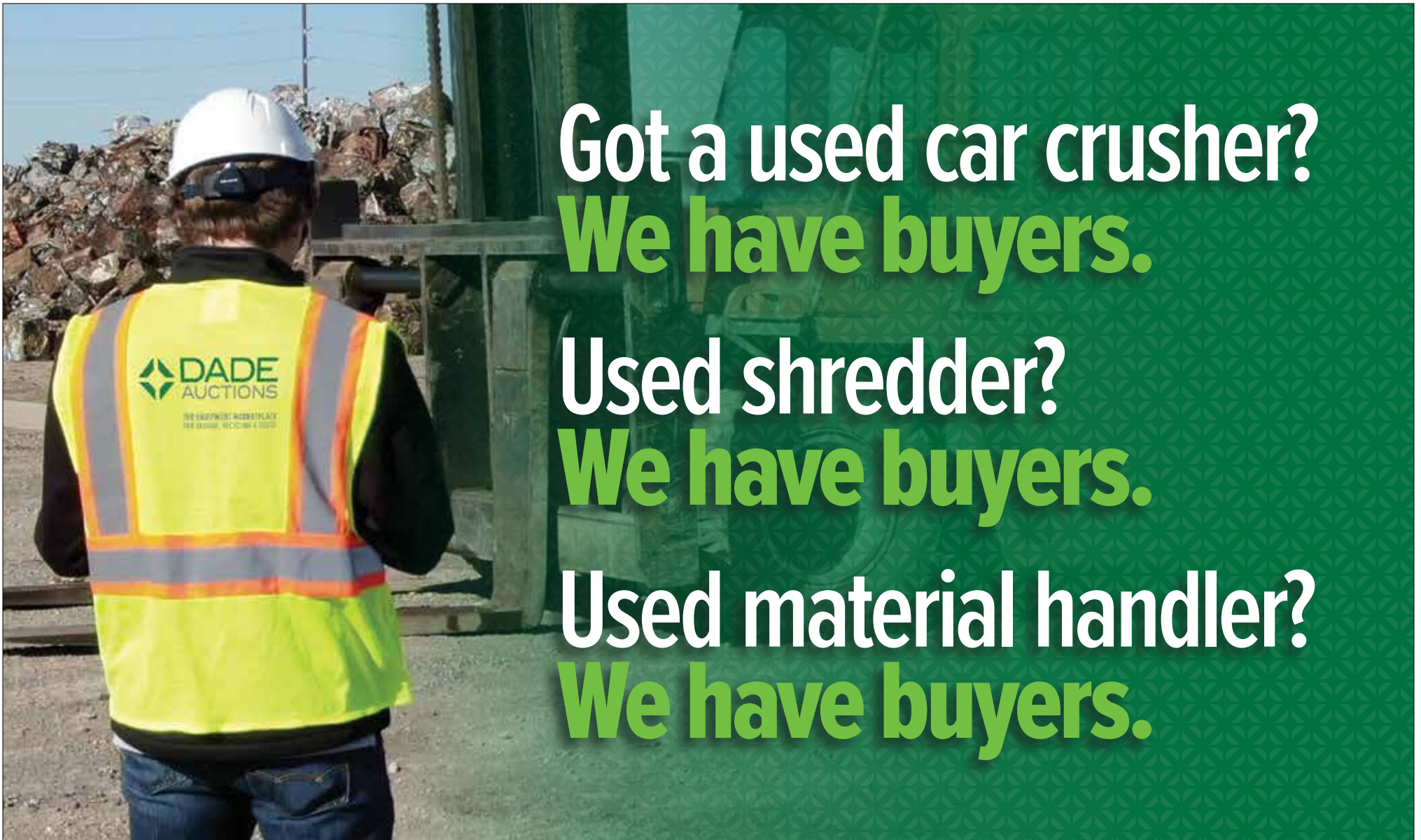
Among other findings, the survey indicated that more than 9 in 10 Americans see both advanced recycling and mechanical recycling as examples of recycling. It also found that:

- 90 percent of Americans care more that a plastic item doesn't end up in the trash or litter than which process is used to recycle the item.
- 87 percent of Americans believe industry and government should do more to support all types of recycling, including advanced recycling.
- 89 percent of Americans say that the label of "recycled content" is appropriate for plastics processed by mechanical recycling or advanced recycling.
- 91 percent of Americans say that the label "recyclable" is appropriate for products that could be processed by mechanical recycling or advanced recycling.
- 82 percent of survey participants agree that it is appropriate to label an item as recyclable if a product can be recycled, even if access to recycling facilities across the country varies.

Consumers also recognize the value of "mass balance" accounting practices, which are used by many industries to track attributes of sustainable feedstocks, such as amount of recycled content, across complex supply chains. In fact, 67 percent of Americans consider mass balance-certified plastics to be better (21 percent) or the same (46 percent) as other recycled content, while only 14 percent of survey participants disagree.



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