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Recyclers strive to offset low metal prices



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FOCUS: Metals Innovative practices lead to higher precious metal recovery

by MAURA KELLER

mkeller@americanrecycler.com As e-waste continues to flood our waste stream, the improper disposal of electronics - specifically cell phones and computers – is a huge threat to the environment. State-of-the-art electronics are also a treasure trove of precious metals. And while pulling precious metals from these items makes sense financially, it has also resulted in significantly improved environmentally friendly and sustainable recycling technologies.

According to the January 2019 report from the World Economic Forum, in the U.S., the recycling rate of ewaste hovers around 25 percent. The remaining 75 percent of this waste is stored in numerous places due to a lack of convenient recycling options. But this e-waste is teeming with precious metals, all of which can be recovered and recycled for future use. For instance, in 2015 Apple reported that it had recovered more than a ton of gold from recycled devices, resulting in over \$40 million worth of gold, reducing the need for future mining efforts.

As Meredith Leahy, waste diversion manager and circular solutions lead at Rubicon Global explained, the EPA has published some key numbers on the amount of precious metals we have in our electronics.

"The EPA states that cell phones alone contain gold, silver, platinum, palladium, copper, tin and zinc. Those recovered materials can then be used in items like jewelry, other electronics and even art," Leahy said.

And while recovering precious metals from electronic waste is an environmentally sound practice, according to research published in the American Chemical Society's journal, Environmental Science & Technology, it is also fiscally responsible. Recovering pre-



After smelting, the metals will be ready to be forged into new uses, such as jewelry, new computer parts or other purposes of precious metals. PHOTO BY TIM GRAY | DREAMSTIME

cious metals via e-waste recycling is 13 times cheaper than extracting these metals from mines.

The role these metals play in electronics is paramount. Paul Gregory, director of recycling and organics at Texas Disposal Systems (TDS), said these metals are normally used as filaments and critical contact points that conduct electricity throughout electronics. Because of their high value, these are the most important metals to harvest from electronics. Texas Disposal Systems is one of the largest independently owned solid waste collection, processing and disposal companies in the nation. The company's fully integrated facility incorporates solid waste disposal, compost production and recycling operations.

Of course, there are other key metals such as copper, nickel, and aluminum in casings, wiring and other components of a computer or cell phone. "These nonferrous metals have a high value as well and are just as recyclable as any other metals," Gregory said. "Our company will collect and recycle all of

these metals mentioned, as well as several other types of metals and recyclables."

In fact, these valuable metals were some of the metals that TDS harvested in the company's early days.

"When we handled the disposal of IBM computers in the 1970s, we would recycle and repurpose the metal used from servers, tube components and other large electronic parts. This allowed us to develop our business in sustainability and kick start our recycling efforts more than 40 years ago," Gregory said.

Methods To Take

As Leahy explained, there are two dominant approaches to recycling today's used electronics one is de-manufacturing, which is manually dismantling the electronics in order to utilize the raw materials that are found for recycling and the other is shredding, where the electronics are loaded into large shredders which helps to reduce manual sorting and separation of components.

"Metals have been recycled for thousands of years, but in the last 50 years or so, we've seen some interesting developments, particularly in fields using granulation methods to pull out more metals with less effort," Gregory said.

Some newer methods, such as the ones used by Liquisort, will actually process these metals in a special bath. Located in the Netherlands, Liquisort specializes in the separation of nonferrous metals by using a sustainable, innovated and patented sorting method that makes it possible to sort various metals into clean, separated fractions.

As Gregory explained, "Liquisort's bath separates metals with dense water and magnet systems to better the purity of metals. This granulation process is a relatively new one, and when combined with shredding options of electronic waste, this reduces the need for handseparation and increases the amount of metals that we can recycle, particularly from electronic waste.

"After going through several layers of separation and granulation, precious metals will create a fine See PRECIOUS METALS, Page A2

New York agencies call for Precious metals . continued from Page 1 biomass heating system mesh or powdery-like substance," Gre-

of Environmental Conservation (DEC), Adirondack Park Agency (APA) and New York State Police formally commissioned a renewable biomass heating system at the State Office Campus in Ray Brook, New York. The high-efficiency low-emission boiler, fueled by wood pellets, will provide heat to DEC Region 5, APA, and State Police Troop B headquarters. The \$3 million renewable energy project was developed in partnership with DEC, State Police, APA, the New York Power Authority (NYPA) and New York State Energy Research and Development Authority (NYSERDA) in support of Governor Andrew M. Cuomo's BuildSmart NY program, which calls for a 20 percent costs while also reducing emissions.

The New York State Department reduction in energy consumption by all state agencies by 2020.

The project was first outlined in Governor Cuomo's Renewable Heat NY Initiative, a long term commitment to help grow the high-efficiency and low-emissions wood heating market.

In 2013, the United States Forest Service conducted a pre-feasibility study at the request of DEC, which concluded that a wood-fueled boiler system providing for the heating needs of the Ray Brook State Office Campus was feasible and that it would provide economic benefits to the forest products industry in the region.

The renewable heating loop system will save the state in annual energy

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gory said. This substance will get packed into 55 gallon drums or other containers, then shipped to a smelter or refinery to be melted down to create new metals. Fine meshes and powders will get melted down and even further separated in large furnaces. This process will help separate different metals by quality, such as 18 and 24 carat gold.

After the smelting process, the metals can then be forged into new uses, such as jewelry, new computer parts or other purposes of precious metals.

Currently, TDS does not offer granulation, smelting or refining, but the company cleans and separates raw metal materials to make it as easy as possible for smelters and refiners to create a new product.

"The biggest macro trend we're seeing in the metal recycling business is that smaller items are being built, which means we need to do more work for less product," Gregory said. "As structural metals are becoming smaller, we're seeing a sweeping change from industrial and oil field metal waste coming in for metal recycling to more electronic waste. We're seeing less use of large metal materials in building and manufacturing, but seeing a dramatic increase in cell phones, computers, televisions, monitors and other smaller consumer electronics."

With these smaller products to harvest metals from, Gregory said it becomes harder to recover materials, especially when it comes to hand separating or using human labor.

"It's not as effective to recover these small metals by hand, breaking these items with hammers or axes like recyclers did with IBM sized computers in the 1970s," Gregory said. "There are more plastic, glass and other non-metal parts you have to get through to harvest the valuable metal commodities."

Recycling innovations in precious metals recovery from e-waste continue to surprise. For example, the New Zealand clean tech company Mint Innovation has developed a unique biometallurgical method to recover precious metals from electronic waste. Using microorganisms to selectively and quickly recover precious metals, such as gold, Mint Innovation can extract these precious metals from electronic waste.

In 2017, Vancouver based EnviroLeach Technologies Inc. entered into a strategic global partnership with Jabil Inc. to utilize EnviroLeach's patentpending formula and processes for the recovery of metals from circuit boards and electronic waste in Memphis, Tennessee.

EnviroLeach's Specifically, cyanide-free and acid-free based chemical formula operates at ambient temperature and at near neutral pH. Traditionally, cyanide has been used to extract gold but instead of using cyanide, EnviroLeach's formula uses five non-toxic, FDA approved ingredients that are combined with water at ambient temperatures.

In addition to these innovative precious metal recycling technologies, some key trends of precious metal recycling that industry players need to focus on include innovation in bulk shredding processes, in mechanically sorting metals and in emerging parts of the smelters/refiners global market.

"In the U.S., we don't see a lot of end result smelting due to environmental regulations, but we'll see emerging fields like copper in South America or nickel in Germany as consistent buyers of these raw, recycled materials," Gregory said. "Metal recyclers who can capitalize on e-waste in the future will be the metal recyclers who succeed in this industry. We look forward to leading our industry in sustainable, responsible metal and e-waste commodity recycling."

A thief broke into my house last night... He started searching for money so I got up and searched with him.



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NWRA recognizes the best in recycling

The National Waste & Recycling Association (NWRA) recognized innovators and leaders in its industry. Awards in five categories were given to companies that have made substantial contributions to the American recycling through partnerships, public education, and innovations in recycling facilities. Winners were selected by a panel of judges who are professionals in the waste and recycling industry as well as from other technology and education organizations.

The 2019 Sustainability Partnership Game Changer Award was shared by the Village of Mount Prospect Public Works in Mount Prospect, Illinois and SWANCC in Wheeling, Illinois.

The Village of Mount Prospect, a community of 13,595 single family homes, 8,351 multi-family units and 691 commercial properties, has been a member of the SWANCC organization for 30 years. SWANCC is an intergovernmental agency encompassing 23 communities. The benefits of this partnership have allowed the Village of Mount Prospect to thrive in recycling. The agency provides Mount Prospect with a range of waste management services. It all began with a document destruction event. This was followed by in-house recycling and seasonal electronic recycling. Through this partnership, Mount Prospect has grown the recycling services provided to residents, allowing it to successfully divert 35 percent of residential waste in 2018.

The 2019 Best Recycling Public Education Program Award went to Republic Services (RS) for its "Recycling Simplified" campaign.

With contamination rates at about 30 percent, Republic Services developed its Recycling Simplified consumer education campaign designed to reach a national consumer base, while focused on six local markets: Dallas, Las Vegas, Jacksonville, Cleveland, Philadelphia, and Phoenix. This \$2M campaign utilized a multifaceted approach to educate regarding what and how to recycle while reducing contamination.

Through initial research, RS found that recycling was too complicated. This drove their "Recycling Simplified" message and launched their new RecyclingSimplified.com website - which is filled with educational content.

In addition, they used more traditional outreach mechanisms such as billboards for their simple, pointed Empty, Clean and Dry[™] message. Direct feedback was provided through auditing routes, marketing and then re-auditing to gauge the campaign's effectiveness. Also, Republic's own employees were educated to ensure they also knew what and how to recycle.

The 2019 Recycling Facility of the Year went to the Plano Recycling Facility in Plano, Texas.

In December 2016, after a fire destroyed Republic's Plano, Texas recycling facility, the company worked with local officials to create a new state-of-theart recycling center that would not only process recyclables using innovative technology, but also provide recycling education to the community. In mid-2017, they

the plans were for a bigger, more advanced facility with better equipment.

The LEED facility was finalized in 2018 and in 2019, began operations. Each month, 6,000 tons of paper, plastic, ferrous-containing metal, aluminum, cardboard, and glass are processed at the 77,000 sq.ft. facility. A single shift of 35 full time employees employed advancements such as optical sorters to posi-

began to rebuild at the same location but tively sort fiber. To avoid a repeat of the 2016 fire, advanced fire prevention technologies were installed, including thermal imaging cameras and remote controlled fire suppression capabilities.

> The 2019 Innovator of the Year -Recycling Equipment went to Styro-Constructor.

The Styro-Constrictor was introduced to the market in 2019 after years of research. The unit converts expanded polystyrene (EPS) waste to recyclable plastic. The prototype Styro-Constrictor was operated for 2 years processing over 60,000 lbs. of EPS.

The equipment is portable, so it can travel to locations with large quantities of EPS, "constricting" it down to a denser plastic. It has safety features including emergency safety stops, keyed drive motors and keyed chute lock.



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RTS acquires Recyclebank

Recycle Track Systems (RTS) announced the acquisition of Recyclebank, signaling RTS' continued growth in the waste and recycling industry and its commitment to making waste collection easier, smarter, and more responsible. This is the company's first acquisition since launching in 2015 and follows RTS' recent hire of Allyn L. Shaw, a leading banking and technology executive, as president and chief technology officer.

"This marks a major step forward in expanding RTS' technology offerings and further highlights our commitment to putting positive social impact into action," RTS chief executive officer Greg Lettieri said. "The move not only aligns with our core values, but underscores the company's commitment to modernizing the waste and recycling industry for everyone."

In closing on the sale of Recyclebank, a rewards platform that encourages individuals to recycle through an incentive program, RTS now expands into the gamification space. Users measure their recycling participation via online engagement, earning points by tracking their daily sustainability habits. The more users recycle and learn, the more rewards they earn that can be used to support local businesses, purchase green-friendly products, or make donations to user-chosen charities.

This move also supports RTS' recent entry into the municipal sector by combining technology, analytics, education and incentives at the individual level.

"Recyclebank is the only incentive program for recycling on the market," RTS chief technology officer Allyn L. Shaw said. "Its approach to innovation, and the way Recyclebank leverages technology to improve waste diversion, naturally aligns with our model as we expand our capabilities to serve customers."

This deal will add value to RTS' current diversion tracking services, in which community officials and residents can use the platform to understand recycling habits, collectively send less trash to landfill, and improve economics around waste.

Shaw also noted that RTS plans to utilize the Recyclebank platform to support other industries by encouraging effective recycling practices for businesses. "Legislation and regulation vary across cities, making it challenging for companies to educate their customer base – and even their own employees – on proper waste sorting, such as what can and can't be recycled," Shaw said. "By providing an interactive platform, users can stay up-to-date on compliance and use the helpful resources at their fingertips."

Recyclebank has two million members, serves 67 municipalities, and tracked one billion pounds of recycled material through user engagement in 2018. Recyclebank has earned several honors for its work: the U.S. Conference of Mayors named it an Outstanding Public/Private Partnership, and Recyclebank was named one of the Top 50 Most Innovative Companies by Fast Company.



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Virginia association honors recycling programs

The Virginia Recycling Association honored several exemplary waste reduction and recycling programs in October.

Awards were given in three separate categories:

•Show Me the Way – How do you explain recycling to your customers?

•Lemonade – How have you made something wonderful from a bad situation?

•Best in Show – How has your program made a difference in your community?

This year's award winners were selected from nine nominations and represented the best of recycling innovation, education, and community engagement from across Virginia.

Best in Show Winner – Goodwill of Central and Coastal Virginia

Goodwill was paying to have 250,000 pounds of books recycled each month, which was costly and seemed wasteful. They knew that there was a better way to process and distribute such a large volume of books and that there was value in the marketplace for these books.

In early 2017, Goodwill established a partnership with Henrico County public schools to supply books to students and families after seeing a news story requesting the donation of new and gently used books to support the school division's new Reading and Writing Across the Curriculum Challenge in secondary schools.

Henrico County and Goodwill established a weekly opportunity for school personnel to visit the Goodwill headquarters and "dive for books". School staff sort through thousands of books, selecting



Erica Carter (awards committee chair), Jeff Blevins (Page County), Teresa Sweeney (VRA president), Helen Lee (City of Alexandria), Margaret Eldridge (VRA executive director), Russ Rainer (Goodwill of Central & Coastal Virginia) celebrate the 2019 VRA awards.

those that will be utilized and loved at their schools. Goodwill supplies bins and assistance in loading books into personal vehicles.

These free books are now being enjoyed by students in elementary, middle and high schools; Henrico Book Nooks (free libraries) around the county; and the Department of Family Engagement bus which provides giveaways to neighborhoods and community, civic, and school events.

This free program supplies a reliable source of books to the families in most need and to teachers who have limited budgets for books. As of September 2019, this initiative has placed 148,931 free books into the hands of teachers, librarians, students, and families.

Show Me the Way Award Winner – Recycle Right Alexandria

The City of Alexandria developed an online, interactive game that teaches children ages seven and up to properly sort their recyclables, yard waste, and trash using city services. Players match discarded household items (paint, food waste, aluminum cans, etc.) with the appropriate city service and build their own digital Alexandria park in the process.

After completing all five levels of the game, players can print out a certificate of achievement. Residents who snapped a picture of themselves with their certificate and shared it on social media were entered into a contest to win items to help them reduce and divert waste (reusable tote bag, reusable water bottle, or a compost caddy).

Implementing this sorting game was also a short-term goal that was identified as part of the city's newly adopted WasteSmart Strategic Plan. The sorting game also features analytics in the back end, which provide statistics on the number of game plays, number of completed games, number of certificates printed, and a list of the most misunderstood materials. For example, the city found that one of the most misunderstood materials that was incorrectly sorted in the game was loose shredded paper. The analytics showed that 33 percent of players thought this material could be recycled, when in fact, it should go into the trash bin. This type of data helps the city target specific outreach messages on contamination and how residents can Recycle Right in Alexandria.

Lemonade Winner – Page County

The Page County Solid Waste Department had to take a hard look at its recycling program when recycling markets began to deteriorate in 2018.

The department had been spending \$34,000 per year to deliver the recyclables collected at four county drop off locations to the nearest materials recovery facility, consuming most of the revenue generated by sales of those recyclables.

In 2018, department staff decided to change the program from a small recycling program with large transportation costs to a large revenue generator with minimal costs. By purchasing and installing a used baler in their maintenance garage, they were able to eliminate all transportation and delivery costs.

Since Page County started baling their own cardboard, comingled plastic, mixed paper, and aluminum cans, they have increased the amount of materials recycled, reduced costs and increased revenue.

Applications for 2020 VRA Awards will be accepted beginning in August 2020.





Keramida participates in fundraiser for water resource protection

For the second year, Keramida employees came together to participate in the largest fundraiser of the year for the White River Alliance, a non-profit coalition focused on improving and protecting water resources in Central Indiana. The event was held in September near White River State Park.

The Keramida team – dubbed the Keramida Argonauts – was a dragon boat sponsor and placed 4th overall out of 25 teams. Keraminda thanked Jamie Warren, who worked hard organizing their team, developed the theme, made shirts, and took charge of the entire program.



Timken to acquire BEKA

The Timken Company, engineering bearings and power transmission products, has reached an agreement to acquire BEKA Lubrication, a supplier of automatic lubrication systems, for approximately \$165 million. The company serves a diverse range of industrial sectors including wind, food and beverage, rail, on and off highway and other process industries. BEKA sales are expected to be around \$135 million for the full year 2019.

Family owned and operated since its founding in 1927, BEKA is headquartered in Pegnitz, Germany. The company employs approximately 900 people.

Applications for environmental grants now available

As authorized by the National Environmental Education Act of 1990, EPA announced the availability of up to \$3 million in funding for locallyfocused environmental education projects under the 2020 Environmental Education Grant Program. EPA will award 3 to 5 grants in each of the agency's 10 regions. Groups interested must submit their application by January 6, 2020, to be considered. The Requests for Application (RFA) is posted on www.grants.gov.

"This funding will support projects aimed at educating and inspiring the next generation of Americans to tackle pressing environmental challenges like marine litter and food waste," said EPA administrator Andrew Wheeler. "Through EPA's Environmental Education Grant Program, we are able to bring more environmental education opportunities to local communities across the country."

In addition to other environmental topics, the 2020 Environmental Education Grants Program will fund education-based projects pertaining to marine debris mitigation, food waste and loss reduction, and recycling. Funded projects will both increase public awareness on various environmental matters and enhance participants' abilities to make informed decisions on environmental issues prospectively. Determine Eligibility

Applicants must represent one of the following types of organizations to be eligible for an environmental education grant:

Local education agencyState education or environmental

•College or university

•Non-profit organization as

described in section 501(c)(3) of the Internal Revenue Code •Noncommercial educational

broadcasting entity

•Tribal education agency (which includes schools and community colleges controlled by an Indian tribe, band, or nation and which are recognized as eligible for programs and services provided by the United States to Indians because of their status as Indians and which are not administered by the Bureau of Indian Education.)

•Applicant organizations must be located in the U.S. or territories and the majority of the educational activities must take place in the U.S., Canada or Mexico; or in U.S. Territories.

The application and budget forms must be completed according to the directions.

Each RFA contains complete instructions for submitting a proposal, See GRANTS, Page 7



WASTE

EPA awards first installation of \$40 million grant to Puerto Rico Solid Waste Management Plan

A waste characterization study will be used to analyze the material composition

As part of its continuing efforts to help the Caribbean recover from the long term impact from Hurricanes Irma and Maria, the U.S. Environmental Protection Agency (EPA) is awarding a \$6.2 million to the Puerto Rico Department of Natural and Environmental Resources (DNER) as the first installment of a \$40 million grant for hazardous and solid waste management financial assistance. This funding is awarded through the Supplemental Appropriation for Disaster Relief under the Bipartisan Budget Act of 2018, which provides supplemental appropriations to respond to and recover from recent hurricanes and other disasters.

"EPA is partnering closely with Puerto Rico as we work collaboratively to tap into every eligible financial resource available to assist with the long-term recovery work and bring stability to the island, both environmentally and economically," said EPA regional administrator Pete Lopez. "Many of Puerto Rico's landfills were facing challenges such as not meeting requirements or nearing capacity before Hurricanes Irma and Maria generated more than 12 million cubic yards of debris. This funding will help Puerto Rico's government build capacity in its solid waste programs and help municipal landfills make urgent improvements."

This massive amount of waste produced by the storms largely went to these landfills, crippling solid waste infrastructure in Puerto Rico. Equally important, it is expected that EPA's approval and financial backing of DNER's waste management work plan will aid Puerto Rico's post storm landfill issues and develop a long term sustainable solid waste program that addresses historic shortcomings and increase preparedness for managing waste from future storms.

The work is expected to take seven years and DNER proposes to implement the grant work plan activities in two phases. Phase I, funded by the \$6.2 million installation, will begin shortly after grant funds are received with EPA oversight and includes hiring and training staff, conducting a solid waste characterization study, updating Puerto Rico's integrated solid waste management plan, and updating solid waste regulations to adequately design, construct and operate landfill systems.

A solid waste characterization study followed by a market analysis allows the government to understand the composition of materials discarded in the waste stream. Waste characterization data is collected by taking samples of waste and sorting it into material types, including recyclable items such as newspapers, cardboard, plastic bottles, glass bottles and jars, tin cans and small appliances. This study is the first step in developing and updating the integrated solid waste management plan and evaluating ways to reduce and manage waste and cut disposal costs. Additionally, the data collected will inform and assist the government of Puerto Rico when making future policy and regulation decisions in its efforts to improve its landfill operations.

Once DNER is ready to start Phase II of the work plan activities, EPA will collaborate with DNER to approve the plan and award the remaining \$33.8 million in grant funds. Phase II will use the grant funds for more staffing and training, providing outreach and technical assistance, conducting permit and landfill closure plan reviews, and conducting non-hazardous waste compliance and enforcement activities.

Throughout the process, EPA will continue to work closely to provide support to DNER and the Puerto Rican government as they work with local offices and other stakeholders to maintain a sustainable solid waste program.

Grants -Continued from Page 6

including all required information and limitations on format. A summary of the required information is below. Read the RFA thoroughly for application procedures. All applications must be submitted through www.grants.gov.

Find the forms on the "Application Forms" tab. Materials should be submitted in the following order:

•Two Federal forms: Application for Federal Assistance (SF 424) and Budget (SF 424-A)

•Work plan (up to 8 pages): •Project summary (recommended

1 page)

•Detailed project description

•Project evaluation plan

•Detailed budget showing match

and subawards (not included in the page limit)

•Appendices (not included in the page limit)

Timeline

•Logic model showing outputs and outcomes

•Programmatic capabilities and past performance

•Letters stating responsibilities of partners, if applicable

Submit the Proposal Materials

•Applications must be submitted by January 6, 2020, electronically through www.grants.gov by following the instructions in the RFA.

For a full list of solicitation notices, view this article on www.AmericanRecycler.com.

Meridian Waste expands into North Carolina

Meridian Waste, an integrated, non-hazardous solid waste services company, has signed a definitive purchase agreement to acquire the equity interests of Shotwell Landfill, Inc., Shotwell Transfer Station II, Inc., Capitol Waste Transfer, LLC, Capital Recycling, LLC and Morrisville Transfer Station LLC throughout the greater Raleigh, NC marketplace. The stock purchase agreement is scheduled to close within 90 days. This will be Meridian Waste's first acquisition within North Carolina and the 11th acquisition since the company transitioned to private stock under the ownership of Warren Equity Partners (WEP) in April 2018.

Meridian Waste North Carolina, LLC is acquiring the Shotwell construction and demolition debris (C&D) landfill located at 4724 Smithfield Road, Wendell, North Carolina 27591, the Shotwell Transfer Station II (C&D) located at 1506 N Salem St, Apex, NC 27502, the Capitol Waste Transfer Station (C&D) located at 424 Warehouse Drive, Raleigh, NC 27610 and the municipal solid waste (MSW) transfer station known as the Morrisville Transfer Station located immediately north of 222 International Drive, Morrisville, NC 27560. The purchase will also include disposal and commercial contracts associated with the disposal facilities as well as hauling assets.



"The strategic value of this acquisition is a game changer for Meridian Waste," stated Walter Hall, chief executive officer. "The opportunity to purchase a very viable C&D landfill in a dynamic growth market such as Raleigh-Durham and to have multiple transfer station assets to help feed volumes to both the Shotwell C&D Landfill as well as the existing Meridian Waste Lunenburg MSW Landfill in southern Virginia is transformational. This enhances the margin performance of our company's existing assets and adds revenue producing resources to our disposal portfolio in a booming geographic economy", he

said. "The King family members of the Shotwell Companies are exactly the type of private, savvy entrepreneurs we find ideal to partner with to expand the footprint and growth opportunities for Meridian Waste. We are pleased they will continue to work with us post-closing to maximize the expansion prospects for the company in North Carolina."

The expansion into North Carolina exhibits Meridian Waste's further advancement into the South with collection and disposal operations now within six states.



WASTE

Waste Management feels results from lower commodity pricing

Waste Management, Inc. announced financial results for its quarter ended September 30, 2019. Revenues for the third quarter of 2019 were \$3.97 billion compared with \$3.82 billion for the same 2018 period. Net income for the quarter was \$495 million, or \$1.16 per diluted share, compared with \$499 million, also \$1.16 per diluted share, for the third quarter of 2018. On an adjusted basis net income was \$502 million, or \$1.19 per diluted share, in the third quarter of 2019, compared with \$496 million, or \$1.15 per diluted share, in the third quarter of 2018.

The company's adjusted third quarter 2019 results exclude a \$0.03 per diluted share negative impact from costs incurred in connection with the pending acquisition of Advanced Disposal Services, Inc. and related reduction of common stock repurchases from planned levels.

"In the third quarter we continued to see our collection and disposal lines of business deliver strong revenue and earnings growth, particularly in the segments of our business that reflect the resilience of the consumer," said Jim Fish, president and chief executive officer of Waste Management. "This strong operational performance led to growth in cash from operations of almost 9 percent.

Key Highlights for the Third Quarter of 2019

Total company operating EBITDA was \$1.14 billion for the third quarter of 2019, an increase of \$60 million from the third quarter of 2018. On an adjusted basis, total company operating EBITDA was \$1.14 billion for the third

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quarter of 2019, an increase of more than \$30 million from the third quarter of 2018.

Operating EBITDA in the company's collection and disposal business, adjusted on the same basis as total company operating EBITDA, increased \$94 million, or 7.8 percent, in the third quarter of 2019 when compared to the third quarter of 2018. As a percentage of revenue, operating EBITDA in the company's collection and disposal business increased 50 basis points.

Revenue Growth

In the third quarter of 2019, organic revenue growth was driven by strong yield and volume growth in the Company's collection and disposal business, which contributed \$198 million of incremental revenue.

Core price for the third quarter of 2019 was 5.3 percent, compared to 5.4 percent in the third quarter of 2018.

Internal revenue growth from yield for the collection and disposal business was 2.6 percent for the third quarter of 2019 versus 2.5 percent in the third quarter of 2018.

Collection and disposal business internal revenue growth from volume was 3.3 percent, or 2.7 percent on a workday adjusted basis, in the third quarter of 2019. Total company internal revenue growth from volume, which includes our recycling and other ancillary businesses, was 2.6 percent, or 1.9 percent on a workday adjusted basis, in the third quarter.

Commodity-Based Businesses

The continued decline in market values for recycled commodities, which were down 40 percent year-over-year in the third quarter, drove a revenue decline of \$86 million and presented a more significant headwind in the quarter than anticipated. As a result of conefforts tinued to advance а fee-for-service business model, the operating EBITDA in the company's recycling line of business declined by only \$7 million when compared to the third quarter of 2018.

For the full year, the company expects the recycling line of business to be a \$0.01 to \$0.02 per diluted share headwind.

Operating EBITDA from the sale of renewable natural gas credits declined approximately \$8 million from the third quarter of 2018 due to lower market values.

For the full year, the company expects the sale of its renewable natural gas credits to be a \$0.03 to \$0.04 per diluted share headwind.

The company paid \$218 million of dividends to shareholders in the third quarter of 2019.

The company spent \$76 million on acquisitions of traditional solid waste businesses during the third quarter of 2019.

Republic Services reports earnings are up

Republic Services, Inc. reported net income of \$298.3 million, or \$0.93 per diluted share, for the 3 months ended September 30, 2019, versus \$263.4 million, or \$0.81 per diluted share, for the comparable 2018 period. Excluding certain gains and expenses, on an adjusted basis, net income for the three months ended September 30, 2019 was \$291.7 million, or \$0.91 per diluted share, versus \$269.0 million, or \$0.82 per diluted share, for the comparable 2018 period.

"We are pleased with our third quarter results. The team's continued ability to tightly manage costs and capitalize on favorable solid waste trends enabled us to price in excess of cost inflation and expand underlying EBITDA margin by 60 basis points. During the quarter we invested \$275 million in acquisitions, further strengthening our leading market position and increasing the scale of our operations," said Donald W. Slager, chief executive officer. "We now expect to outperform our original 2019 full-year adjusted EPS guidance and achieve the upper-end of our adjusted free cash flow guidance range. The momentum in our business and stable economic backdrop position us well for continued growth in 2020."

Third-Quarter Highlights:

•Cash provided by operating activities was \$651 million and adjusted free cash flow, a non-GAAP measure, was \$372 million. Year-todate cash provided by operating activities was \$1.8 billion and adjusted free cash flow was \$1.0 billion.

•Cash flow invested in acquisitions was \$275 million, or \$228 million net of divestitures. This brings the company's year-to-date acquisition investment to \$490 million, or \$441 million net of divestitures. The annual revenue acquired, net of divestitures, in the third quarter was approximately \$55 million. Year-to-date annual revenue acquired, net of divestitures, was approximately \$161 million.

•Total cash returned to shareholders through dividends and share repurchases was \$271 million.

•Core price increased revenue by 4.7 percent. Core price consisted of 5.7 percent in the open market and 3.1 percent in the restricted portion of the business. This is the highest level of core price the company has achieved in over a decade.

Company Declares Quarterly Dividend

Republic announced that its board of directors declared a regular quarterly dividend of \$0.405 per share for shareholders of record on January 2, 2020, which will be paid on January 15, 2020.

WASTE

EREF board awards six scholarships for 2019

The board of directors of the Environmental Research & Education Foundation (EREF) has awarded six scholarships to Master's and Doctoral students across North America pursuing education in solid waste management.

Scholarship winner Ashley Beninghaus's work focuses on improving a process that is already occurring at some wastewater treatment plants across the country. This process, called anaerobic digestion, typically serves as the final step in wastewater treatment. The anaerobic digester is where all of the sludge and solids are sent to be broken down by microorganisms in the absence of oxygen. Fats, oils and greases (FOG) can be used to enhance biogas production in anaerobic digestion, but this process is fairly sensitive to changes in feedstocks.

Beninghaus's research looks at how to optimize the system by altering the microbial community that exists in a digester. She is doing this by stressing the system and overfeeding it fats, oils and grease so that, ideally, the weaker microbes, or those that are not attuned to dealing with fats, die out and those that are better at handling fats make up a larger portion of the population. These results can be used to help operators better adapt their systems to the digestion of fats, oils, and greases and will hopefully allow for existing systems to increase their loading rates, allowing for more food waste to be diverted from landfills in the future.

Winner, Morgan Higman's project examines local government strategies to manage waste collection challenges in the wake of natural disasters such as flooding, hurricanes or wildfires. Following these kinds of events, the sheer volume and haphazard distribution of waste materials can pose significant collection burdens as well as threats to public safety. This project evaluates the use of particular contracting strategies to reduce the costs and administrative burden affiliated with this special kind of waste collection. Altogether, this project seeks to identify dimensions of effective, efficient special waste collection across a variety of local governments and disaster types to guide decision-makers, improve service delivery and advance recovery efforts in post-disaster waste collection scenarios.

Winner Seth Kane's project looks to develop novel composite materials by combining biochar from food waste with recycled or biodegradable plastics. Biochar is a carbon-based material produced by heating biomass in a low oxygen environment. From a waste reduction perspective, it is not desirable to add fillers to plastics that may be recycled, as recycling of composite materials is not widespread and is economically expensive. For this reason, recycled high-density polyethylene (HDPE) and a biodegradable plastic, polylactic acid (PLA), will be examined. When added as a filler material to plastics, biochar from agricultural residues has been shown to increase the strength of plastics, and decrease the weight. This analysis will identify potential areas in which these composites could replace neat plastics (pure compounds).

Zachary LaTurner is developing novel methods for resource recovery of food waste. Food waste is a vastly underutilized resource that contains large amounts of bioavailable nutrients and resources. Acid fermenters are microbially based platforms that can break down food waste into volatile fatty acids. Additional biological or chemical processes can turn these volatile fatty acids into many different organic chemicals. As such, volatile fatty acids are a potential chemical production platform to replace the petroleum and oil-based platform that is used to produce a wide range of products today. One of the goals of LaTurner's research is to elucidate how different functional groups of microorganisms in acid fermenters break complex organic matter down into simple volatile fatty acids. This knowledge will help determine how the variability in the incoming organic waste stream affects the composition of the effluent stream. Additionally, a fundamental understanding of the interactions will give us greater control over the function of the microbial community.

Scholarship winner Sierra Schupp's project was methane production and microbial ecology of solid waste in landfills. As solid waste anaerobically decomposes in landfills, methane gas is produced and often captured. It is generally accepted that landfills operate optimally at mesophilic temperatures (moderate, around 37°C/98.6°F). In addition to threatening the infrastructure of a landfill, elevated temperatures are presumed to inhibit methane generation. However, there is evidence that microbial communities present in waste are able to adapt and sustain methanogenesis (formation of methane by microbes) as temperatures rise in landfills. Sierra's research project aims to evaluate the temperature range for methane production in landfills exhibiting elevated temperatures. In concurrence, this work will elucidate the microbial ecology of solid waste in elevated temperature landfills.

Winner Martina Soliman's project is reclaimed waste to energy aggregates. In the United States, solid waste is being disposed of in landfills at a rate of 50 percent -60 percent due to a lack of existing recycling infrastructure. Solid waste is processed through municipal solid waste incinerator plants, where it is burnt into ash to significantly reduce its volume. Eighty to 90 percent of this ash is sent to landfills, which is an unsustainable practice due to decreasing land availability. In addition, landfill disposal of raw ash costs \$30 to \$40 per ton. Alternatively, in recent years a recycling process has been developed to refine solid waste ash into a sandlike material known as reclaimed sands. Soliman's research investigates the utilization of reclaimed sands as lightweight, fine aggregates in concrete masonry units (CMU).



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ELECTRONICS

Two Brothers Scrap Metal teams up with a school to collect electronics



Students from Mineola Middle School pose with some of the electronic devices they collected during their fifth annual eWaste Drive. They are joined by (back row, left to right) Kelly Clifford, teacher; Andrew Casale, principal; Vincent Interrante, robotics club moderator; Lindsay Borges, teacher; Amy Trojanowski, assistant principal; and Melissa Fusco, robotics club moderator, Mineola Middle School; and Mark Santiago, manager. Two Brothers Scrap Metal. Also pictured are Joanne Zappalla (front row, fourth from left), environmental club advisor, and Steve Benner (fifth from left), dean of students.

Two Brothers Scrap Metal donated the use of a container for Mineola Middle School's eWaste Drive, which was held in October. The drive brought in 8,840 pounds of electronic waste – the largest amount collected was to help the environment by Two Brothers since the company became involved in this event back in 2016. Residents came to the anymore; recycling elec-

school to drop off their unwanted and unused computers, hard drives, printers, flatscreen TVs, chargers and other items.

The purpose of the drive, now in its fifth year, by disposing of electronics that are either no longer being used or do not work

tronic waste keeps it from winding up in landfills.

The event began as a project initiated by the school's Robotics Club. Three years ago, the Robotics Club teamed up with the school's Environmental Club to promote the Drive to the local community.

Two Brothers has participated in the eWaste

Drive for the past four years. During that time, Two Brothers has hauled away 30,880 pounds - more than 15 tons – of electronic waste. Last year, 8,140 pounds of unused electronics were hauled away. The staff at Mineola Middle School thanked Two Brothers for its support.

TES expands into battery recycling

TES, an international e-waste recycling business, announced the opening of two new battery recycling facilities - TES B in Singapore and Recupyl in Grenoble, France. The approximately \$25 million investment positions TES as a leader in the lithium battery recycling market and the growing second-life battery space.

Each facility employs an innovative recycling process utilizing proprietary in-house technology and equipment. Auto punching machines and shredders break end-of-life batteries down into fine substances. Magnetic separators recover the copper and aluminum, and a chemical treatment process is used to recover commoditygrade cobalt and lithium. This process is environmentally friendly, as it does not release secondary contaminants like heavy metals or volatile organic compounds into the atmosphere.

Additionally, TES announced that it is working with strategic partners to develop the release of an energy storage system, scalable turnkey solutions that use retired electric vehicle batteries for various commercial and residential energy needs in the secondary market. ESS uses a network of optimally connected second-life battery cells to store electricity.



PLASTICS

Plastics initiative launched

The Ohio Beverage Association applauded the launch of the Every Bottle Back initiative, a breakthrough effort by America's leading beverage companies - The Coca-Cola Company, Keurig Dr Pepper and PepsiCo – to reduce the industry's use of new plastic by making significant investments to improve the collection of the industry's uniquely valuable plastic bottles. The initiative, spearheaded by the American Beverage Association (ABA), will reinforce the value of the industry's 100 percent recyclable bottles and caps, make significant investments to support the circular plastics economy and increase the amount of recycled plastic available so it can be remade into new bottles and not end up as waste in oceans, rivers or landfills.

The Every Bottle Back initiative will:

1. Launch a public awareness campaign to help consumers understand the value of 100 percent recyclable bottles through community outreach and partner engagement and reinforce the importance of getting these bottles back, so they can be remade into new bottles. According to a poll conducted by Public Opinion Strategies (POS), nearly half of consumers were unaware that beverage companies are already making bottles that are 100 percent recyclable, including the caps.

2. Work together to leverage packaging to remind consumers that bottles are 100 percent recyclable and can be remade into new bottles. Beverage companies will begin introducing voluntary messaging on packages beginning in late 2020.

3. Measure industry progress in reducing the use of new plastic in the U.S. through a collaboration with ReSource: Plastic, the World Wildlife Fund's corporate activation hub. Specifically, ABA will use the ReSource: Plastic accounting methodology to track the collective progress made on reducing the use of new plastic.

4. Improve the quality and availability of recycled plastic in key regions of the country, including Ohio, by directing the equivalent of \$400 million to The Recycling Partnership and Closed Loop Partners through a new \$100 million industry fund that will be matched three-to-one by other grants and investors. The investments will be used to improve sorting, processing and collection in areas with the biggest infrastructure gaps to help increase the amount of recycled plastic available to be remade into beverage bottles.

"Consumers want to feel good about the beverages they enjoy but are rightfully frustrated when they see our bottles in oceans, rivers or beaches," said Katherine Lugar, president and chief executive officer of the American Beverage Association. "Our industry is making a commitment to use less new plastic in its beverage containers with investments to reclaim more plastic bottles and partnering with the preeminent environmental and sustainability leaders to do so. Not enough consumers know our bottles were intentionally designed to be remade, and when collected, our industry uses less new plastic. That is why this initiative is so important. The support of the Ohio Beverage Association will help advance this program locally, and I look forward to working with them to build on our ongoing commitment to protecting Ohio's environment for generations to come.'

The efforts support other sustainability efforts underway by The Coca-Cola Company, Keurig Dr Pepper and PepsiCo.

Brightmark opens national site search for \$1B plastic recycling facilities

Brightmark, a San Francisco-based waste and energy development company, is launching a nationwide site search for U.S. locations suitable for its next set of advanced recycling facilities, which will convert hundreds of thousands of tons of post-consumer plastics into new products, including fuels, wax and other products. The nationwide search will kick off November 19 with a webinar and formal indication of interest submission for interested communities.

Brightmark expects to make investments of approximately \$500 million to \$1B at each site location and plans to create more than a hundred jobs in each host community selected through this process, with significant additional indirect economic activity anticipated to occur in each chosen community as a result of the projects.

The company's plastics renewal technology takes single-stream, mixed used plastics and converts it into ultralow sulphur diesel, naphtha and wax. The process is also capable of creating the building blocks for new plastics, thus enabling a circular economy in the plastics industry.

"The U.S. is facing a major plastics recycling shortfall," explained chief executive officer Bob Powell. "Imagine a world without plastic waste. We've got a proven, marketready solution, which we will be scaling up nationally to meet this demand. Communities are struggling with a deluge of contaminated plastics, much of which ends up in incinerators or landfills. We have a viable, profitable alternative that solves many of the challenges historically associated with plastics recycling." Brightmark is currently completing construction of a \$260M plastics renewal facility in Northeast Indiana, which will accept 100,000 tons of plastics each year for conversion into new products. The plant is expected to begin producing fuels and wax in Q2 2020 and will be operating at full capacity by Q4 2020. The feedstock for the Ashley, Indiana plastics renewal facility will be sourced from Indiana and the Chicago metro area.

"Our team has successfully developed billions in power and energy plants, and we're ready to go big on our next plastic conversion sites," said Zeina El-Azzi, chief development officer of Brightmark. "We've built a tremendous partnership with the folks in Steuben County, Indiana, and we're now searching for other communities where we can put down roots and work hand in hand to expand local recycling infrastructure and create jobs."

For consideration during the open solicitation, communities must provide: strong local, regional, and state support for project development through incentives and improved plastic recycling programs; access to at least 200,000 tons per year of co-mingled plastic waste (types one to seven); access to 30 to 100 acres of suitable land with excellent access to rail and highways; and natural gas and electric utility support for such a project. Other criteria will be detailed in a forthcoming request for proposal. BME anticipates completing its site selection by Q2 2020.

Interested municipalities should visit Brightmark's website to learn more about the solicitation process, indication of interest, selection criteria and the project schedule.

Neste and Ravago collaborate to enable chemical recycling process

Neste, a provider of renewable diesel, renewable jet fuel, and an expert in delivering drop-in renewable chemical solutions, and Ravago, the a distributor and recycler of polymers, are joining forces to develop chemical recycling of plastic waste with the aim to reach significant industrial scale. Neste and Ravago have set a joint target to reach an annual capacity to process over 200,000 tons of waste plastic.

Through collaborating in chemical recycling, Neste and Ravago wish to accelerate circularity of materials and improve resource efficiency in the petrochemical industry. The two companies also want to provide more sustainable alternatives to primary fossil feedstock. Chemical recycling of plastic waste will enable the petrochemical industry to meet its recycling targets and develop a more sustainable, climate-friendlier offering.

"Ravago's geographical reach and expertise in plastics recycling together with Neste's track record in upgrading challenging refinery feedstock provide an excellent foundation for demonstrating and scaling up chemical recycling with speed. Collaboration also brings Neste closer to having the necessary partnerships and infrastructure to meet our Plastics Pledge target. Our aim is to process annually more than one million tons of plastic waste from 2030 onwards. With this, we could contribute to increasing the annual recycling rate of post-consumer plastic waste by 25 to 30 percent from the current level in Europe," said Mercedes Alonso, executive vice president, renewable polymers and chemicals at Neste.

Chemical recycling will enable the companies to upgrade even colored and mixed plastic packaging waste into high quality raw material for the production of new plastics, chemicals and fuels. Unlike mechanically recycled plastics, chemical recycling enables waste plastic to be used as raw material even in the most sensitive applications.



Salvaging Millions

by Ron Sturgeon Autosalvageconsultant.com

Tips for dealing with your banker

Learn from the tips in these continuing articles.

If you've made it this far, you realize that there's a lot of information that entrepreneurs need to acquire before approaching their banker. The prior columns had tips and traps noted, but some require more explanation, so we've added them here in this column. Even with all the information you've been given, there are a few more things you should be aware of before you walk into the bank.

Learning these tips can save you time, money and headaches down the road. Remember, you don't know what you don't know, and it's important to surround yourself with people that know more!

Tip 1 – Appraisals aren't always needed.

Although appraisals are very common on real estate deals, you may not need one if the property's value is below a certain dollar amount. The threshold varies by bank.

Banks can use tax district appraisals, depending on the loan-tovalue ratio, rather than conducting a new appraisal. In the current economic environment, the Fed is concerned that local tax districts can't keep pace with rapidly changing property values, because tax districts look at property on only an annual basis. But if the district says a piece of property is worth \$200,000, a customer could likely expect to borrow \$100,000 on that property – or 50 percent of the estimated value – without a formal appraisal.

Tip 2 – All appraisals are not created equal.

In commercial real estate, there are two kinds of appraisals – full scope and limited scope. In a fullscope appraisal, the property is inspected thoroughly, while a limited scope requires less information. Typically, a limited-scope appraisal is all you'll need.

Three factors are considered when a property is appraised:

•Cost: What's the cost to rebuild this building?

•Income: How much revenue can you generate by renting this space?

•Comparable sales: What would be the price if you wanted to sell this property?

Keep in mind that customers can't choose their appraisers. Regulations require bankers hire the appraiser. In the interest of fairness, you can ask your bank to put the appraisal out to bid. The rules have changed dramatically in recent years, so you can't put it out to bid yourself. The new federal guidelines require the lender to get the appraisal and because of the more cautious approach, the odds are very good that the appraised value will be much less than you expected.

There are times that a lender can ask for an updated appraisal with a limited scope or a "drive by" update or "desktop," and any of these can save the customer money.

Tip 3 – To the points.

Points – the additional, up-front fees paid instead of higher interest rates – used to be fairly negotiable in real estate loans. With money less readily available in today's economic climate, that has changed. Today, one point is standard as an origination fee on a real estate loan.

A point is pure income for the bank. There are no costs associated with it, and if the bank wants, it can reduce the fee to half a point or zero. In most cases, it doesn't. But you won't know unless you ask, because chances are the bank isn't going to offer.

The negotiation of points depends largely upon your repayment ability. If you're going into the deal without any money, you're going to have to pay a one percent fee or even more. But if you have a great deal of money, the odds of getting the fee down to half a point or zero are much better.

Lenders can also charge fees on commercial lines of credit. They can charge a point on that line of credit or they might even charge an "unused fee." An unused fee is similar to having a line of credit; it means you want to have money available to you as a loan, but since you aren't using the money, the banker can charge a fee on it. Many lenders don't charge a fee, but expect to pay a commitment fee or unused fee that could be one to three percent of the loan or the unused amount. The reasoning is that they have to "save" deposits and capital to offset your line of credit in case you decide to use the money, so they want to earn something for keeping that money available, and because they have processing costs related to putting your credit in place, even if you don't use it.

Remember, only you can make BUSINESS GREAT!

This article was provided by autosalvageconsultant.com, which was formed in 2001 by recyclers for recyclers, to help them improve their businesses.

RUBBER

Klean Industries begins detailed engineering design for tire pyrolysis projects

Klean Industries Inc. has now selected its exclusive and EPC partner for the delivery of its tire pyrolysis and recovered carbon projects on a global basis. Klean owns the IP behind the world's most commercialized advanced thermal conversion technologies for the tertiary recycling of scrap tires and has begun the detailed engineering and design for two new projects owned by the company. The first project is located in Boardman, Oregon (former ReKlaim site), U.S. and the second is located in Midlands, UK.

These flagship facilities will be the world's leading recovered carbon black facilities and will consist of a fully integrated tire recycling and resource recovery process that have a base name plate production capacity of 120 metric tons per day. It is estimated that these combined projects will have capital costs in the range of \$150m to complete including all infrastructure and balance of plant (BOP). These facilities will each recycle and recover scrap tires into high quality ASTM rated products such as oil, a near nano grade recovered carbon black and steel.

The facility in the UK has been under consideration and development by Klean for a number of years now, however with Brexit on the horizon, in June of 2016 Klean and its partners decided to pull all further investments out of the UK as the economic outlook and risks for leaving the European Union caused concerns that tariffs may be implement by the EU for products produced in the UK that are then exported for sale into the EU. At the time of Brexit, Klean was relying on the European marketplace for nearly 50

percent of UK project output for sales of the products produced from its business activities in the UK. As of 2019, Klean has developed what they believe to be the single largest network for production and distribution of recovered carbon black globally as current production exceeds 100,000 tonnes annually and current demand exceeds current capacities. Now that Klean has built its own network for recovered carbon black sales that is equally distributed around the globe, Klean isn't concerned about the terms of EU product tariffs as the domestic market offers a massive opportunity for the oil produced by Klean under the revised and implemented Renewable Transport Fuel Obligations (RTFO).

The Midland's facility will produce an ASTM certified oil that will comply with the United Kingdom's RTFO which is a requirement set by the UK Government. It establishes a requirement for transportation fuel suppliers to ensure that a minimum percentage of all road vehicle fuel are supplied from sustainable renewable sources. This offers significant economic incentives for the entire production of Klean's oil product domestically which will be used as a blending stock for production of more sustainable transportation fuels. Klean is already in contract negotiations with the largest refineries in the UK on a "take of pay" basis. The Midlands project will also feature the added benefit of the production of green electricity, which will be exported and sold into the national grid, meeting the UK desire and need for green power.

Grants to collect and recycle scrap tires awarded

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has awarded \$1,277,351 in grants to fund 72 community scrap tire drop-off events and other tire cleanups across the state. Additionally, five grant projects will fund the removal of old tire piles at private properties.

Community events provide affordable, convenient, tire recycling opportunities to residents, including the creation of yearlong collection sites and roadside pickups.

Improperly dumped, scrap tires pose a fire hazard and create mosquito breeding grounds. Recycled scrap tires can be used in asphalt to pave roads, as mulch in gardens and playgrounds, and in manufacturing processes.





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AUTOMOTIVE

Lordstown Motors Corp. acquires factory in Lordstown, Ohio

Electric automaker set to make Ohio epicenter of technology

Lordstown Motors Corp. (LMC), a new original equipment manufacturer, has acquired the GM manufacturing complex in Lordstown, Ohio.

The move paves the way for LMC to begin production of the Endurance[™] pickup truck, the industry's first all-electric pickup truck purpose-built for fleets starting in late 2020.

"We are committed to the people of Lordstown, we will locate our headquarters in the Lordstown plant, and we plan to build the Endurance pickup truck utilizing experienced workers who helped produce millions of vehicles in this very same plant," said Steve Burns, LMC chief executive officer. The 6.2 million sq.ft. Lordstown factory is a fully equipped automotive plant that has produced over 16 million vehicles to date.

"The quality and precision of the production robotics and equipment in the Lordstown facility is evident," said Rich Schmidt, chief production officer, Lordstown Motors, and former director of Manufacturing, Tesla, Inc. "Our team feels this is a factor to help us hit the ground running in building the Endurance[™] pickup truck."

Lordstown Motors will be licensing components of Workhorse Group's proven electric drive technology in building the EnduranceTM electric pickup truck, a plan designed to achieve greater speed to market. The agreement with Workhorse also provides the opportunity to transfer 6,000 existing pre-orders received by Workhorse for its W-15 prototype to LMC.

The Endurance[™] pickup truck is designed to be the first production vehicle that utilizes a four wheel drive hub-motor system, a design that reduces the number of moving parts. With its hub motor design, Lordstown engineers have set out to re-invent the electric vehicle. Fleet managers benefit with less breakdowns, lower maintenance, and most importantly, less cost. The overall benefit is an attractive total cost of ownership, which translates into a significantly lower lifetime operational cost compared to traditional pickup trucks.

Ford announces new leader for sustainability

Kim Pittel, Ford's vice president of Sustainability, Environment and Safety Engineering (SE&SE), has elected to retire, ending a distinguished 34 year career. For the past nearly five years, Pittel has led ongoing enhancement and implementation of the company's global environment and safety strategy, policy and performance.

Succeeding Pittel in the top SE&SE position will be Bob Holycross. Since July 2018, Holycross has been global director, Sustainability, Homologation and Compliance. In that position, he has been responsible for sustainable business plans and policies, external relationships with regulatory bodies around the world, reporting on the company's environmental and social performance, and engaging with non-government organizations and other stakeholders.

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BUSINESS BRIEFS

U.S. Department of Labor selects new director

■ The U.S. Department of Labor has selected Scott Ketcham as the new director of the Occupational Safety and Health Administration's (OSHA's) Directorate of Construction (DOC) in Washington, D.C. Ketcham had served as deputy director of DOC since 2017.

Prior to coming to OSHA's national office, Ketcham worked for 19 years as an OSHA acting deputy regional administrator, area director, assistant area director and compliance officer and manager in offices in the Seattle, Dallas and Philadelphia regions. Before joining OSHA, he spent five years as a staff industrial hygienist with the U.S. Army Medical Activity at Bassett Army Hospital on Ft. Wainwright, Alaska. He retired from the U.S. Army after 24 years of active and reserve service.

Ketcham holds a master's degree in Public Administration from the University of Alaska, a Bachelor's of Science degree from Texas A&M University, and is a Certified Safety Professional.

NWRA Services Board elects first female chair

The National Waste and Recycling Association's Services Board of Governors elected Waste Management's Lisa Disbrow to serve as chair. Disbrow replaces Terry Guerin of Southside Landfill.

Quest appoints Lewis as senior VP of sales

Quest Resource Holding Corporation, a leader in environmental reuse, recycling and waste disposal services, has appointed Matthew C. Lewis as senior vice president of sales. Lewis brings more than 30 years of experience in sales and operations leadership in multiple vertical end markets of the waste and environmental services industry. In his new role, Lewis will provide executive leadership to the sales team with a focus on growth and strategic business development.

Prior to Quest, Lewis held executive leadership positions of increasing responsibility at companies such as Waste Management, Inc. and Shell Oil Company. He spent 20 years at Waste Management, where he held executive sales and operations positions in multiple divisions. Lewis also served in executive sales and operations positions at United States Environmental Services, Inc. and Intergulf Corporation.

Sims Metal Management makes board changes

■ Sims Metal Management Limited announced that given concerns expressed by some investors about his role as a sitting chief executive officer, Mike Kane has decided that he will not stand for election at the 2019 Annual General Meeting of the company and will retire from the board.

Dade Auctions hires new sales representative

Dade Auctions, Inc., headquartered in Maumee, Ohio, an auction company dedicated to the recycling, salvage and waste industries, has welcomed a new sales representative, Greg Szymanski.

Szymanski will be operating out of Dade Auction's Maumee, Ohio offices. He will be responsible for equipment sales and financing throughout the U.S.

Aurora Solar Technologies appoints Susan Pan CFO

Aurora Solar Technologies Inc. has appointed Susan Pan, CPA, CMA as chief financial officer and controller.

Pan will replace Viktoriya Griffin in this role. The company thanked Griffin for her contributions especially during the recent period of high sales growth.

Pan brings two decades of international experience to her role. She started her career with China Petroleum & Chemical Corporation, the biggest energy company in China, and was later with Siemens Ltd. in China. Recently, she has held positions as financial controller for HTEC: Hydrogen Technology & Energy Corporation and for Nano One Materials Corporation, both technology companies in the clean energy field. Pan is a Certified Professional Accountant and holds an MBA from Nanjing University.

Carlisle Construction changes division name

■ Carlisle Construction Materials has changed the name of its polyurethane tire fill business from Accella Tire Fill Systems to Carlisle TyrFil. Carlisle acquired Accella Tire Fill Systems as part of its purchase of the Accella Performance Materials family of companies in November 2017. The brand, which is the leading global tire flatproofing solution for the off-the-road (OTR) equipment marketplace, has offered the industry a trusted, go-to-source for tire fill (commonly referred to in the industry as foam fill) flatproofing technology for nearly 50 years.

TyrFil[™] flatproofing, the flagship product line, is used predominately in OTR applications where terrain and working conditions can be highly hazardous to heavy equipment tires. Carlisle's sustainable polyurethane tire fill technology ensures that this essential equipment remains flat-free, helping to mitigate operational downtime in mining, waste management, construction sites and other similar work environments where equipment is prone to tire punctures.

A farmer heard a loud crash behind his house so he grabbed his gun and headed out back. He saw his outhouse destroyed, reindeer laying on the ground and Santa's sleigh laying on its side.

Then Santa stood up and yelled, "Rudolph, you idiot, I said the Schmidt house!"

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BUSINESS BRIEFS

Terminus joins the Plastics Circularity Multiplier group

■ Along with 19 other projects, Terminus has joined the Plastics Circularity Multiplier group, with the aim of boosting the efforts of the European Union towards the establishment of a circular plastics economy, which goes line in line with the achievement of targets set in the EU Plastics Strategy.

The group was launched in October and will work towards improved communication and synergies among Horizon 2020 and FP7 projects, boosting the impact of these projects and at the same time facilitate the availability of the information for policy makers, industry actors and the general public.

First results of the Plastics Circularity Multiplier are to be showcased during a conference in the summer of 2020, while the activities and participation will be open to all ongoing EU projects as from September 2020.

Metro Metals acquires Simon Metals

■ Metro Metals Northwest has acquired Simon Metals as part of its strategy to double export volumes from its Vancouver, Washington, facility.

The addition of the Simon Metals facility in Washington will allow the Oregon-based company to take advantage of its location and access to rail, cutting down on trucking.

The company currently runs 12 trucks daily between Seattle and its Portland facility, approximately 144 miles.

Spohr resigns from board of thyssenkrupp AG

Carsten Spohr informed the executive board of thyssenkrupp AG that he is resigning from his supervisory board mandate of thyssenkrupp AG effective immediately.

The resignation takes place to prevent the occurrence of cross-links due to the planned appointment of Martina Merz as chief executive officer of thyssenkrupp AG. Martina Merz has been a member of the supervisory board of Deutsche Lufthansa AG since 2016.

Carsten Spohr has been a member of the supervisory board of thyssenkrupp AG since 2013. With his resignation, Carsten Spohr enables Martina Merz to be appointed chief executive officer of thyssenkrupp AG, as planned after approval by the supervisory board, and at the same time to remain on the supervisory board of Deutsche Lufthansa AG.

Adesa VirtuaLane multisite support integrated in app

■ Adesa, a business unit of global vehicle remarketing and technology solutions provider KAR Auction Services, announced the full integration of Adesa VirtuaLane[®] multisite capabilities in Adesa's Marketplace mobile app. Marketplace users can now view and bid on all vehicles offered on VirtuaLane multisite events from all desa sites that host these virtual only sales across North America. Adesa sellers are exposed to a broader buyer base and buyers have access to expanded inventory.



UGE signs service contract for 18MW portfolio

■ UGE International Ltd., a leader in solar energy solutions for the commercial and industrial sector, has secured an engineering services contract supporting the development and detailed design of four ground-mount community solar projects in New York State totaling 18MW AC in rated capacity. The contract is expected to be fulfilled by the end of 2019.

The development scope of work includes technology selection review, preliminary site planning, and energy yield forecasting. The detailed design scope focuses on an Issue for Tender engineered drawing package, including site planning (array and equipment layout), single line diagrams and electrical studies.

Meridian Waste acquires Designated Disposal

 Meridian Waste, an integrated, nonhazardous solid waste services company. has acquired the hauling, container, and contract assets of Designated Disposal, LLC located in Knoxville, Tennessee. This is Meridian Waste's third acquisition since entering the Knoxville marketplace within a year. The company first purchased Knoxville Landfills, LLC, two active C&D landfills located within the Knoxville city limits, in November 2018 followed five months later with the purchase of WCA -Tennessee's hauling assets. Designated Disposal is the 12th acquisition since the company transitioned to private stock under the ownership of Warren Equity Partners in April 2018.

The company will transfer the Designated Disposal assets to its current hauling location in Knoxville.

How much does it cost Santa to park his sleigh and reindeer? Nothing! It's on the house!

ALLU names new dealer for southern U.S. states

■ ALLU Group Inc. announced that Lyle Machinery Company, headquartered in Richland, Mississippi, and with 11 locations across the southern U.S., is its newest dealer for the full line of ALLU Transformer[™] material processing attachments. The company not only provides sales and rental of ALLU's unique screener crusher attachments, but also completes aftermarket service and spare parts for customers throughout Mississippi, the Florida Panhandle, and sections of Alabama, Louisiana and Texas.

The Lyle family entered the equipment business in Mississippi in 1958, later expanding its business in 1995. Since 2005, it has been known as Lyle Machinery. Throughout its history, Lyle Machinery has focused on meeting its customer needs through a wide range of equipment, parts and service. The company offers new equipment, pre-owned equipment and equipment rentals, as well as financing and extensive support – including a fleet of service vehicles to assist customers 24 hours a day, 7 days per week.

4THBIN appoints Paul Kirsch as CEO

■ 4THBIN, an e-recycler and data disposal company, announced the appointment of Paul Kirsch as the company's new chief executive officer. Kirsch will lead 4THBIN as the company plans continued rapid national expansion in 2020.

Kirsch was most recently president of Chemours's \$2.7 billion per year fluorochemical operation. He also previously held positions as vice president at XM Satellite Radio, vice president at Hughes Telematics, and president of automotive, metals, and aerospace at Henkel. Kirsch holds a Bachelor of Science degree in mechanical engineering from the University of Pittsburgh and earned his MBA from the University of Michigan.



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Recyclers strive to offset low metal prices

by MAURA KELLER mkeller@americanrecycler.com

Scrap metal prices are at an all-time low. This trend began in 2015 and as a result, recycling rates are decreasing and scrap metal recyclers are struggling to make a profit.

Jason Gates, chief executive officer of waste management sensor-and-data company Compology, said that there are many factors that Compology's customers cite trade wars, labor disputes interrupting production schedules, threats of an economic downturn that continue to impact the scrap recycling market.

"Because of that, keeping operating costs low and keeping content pure are vital to any scrap metal recycler's success," Gates said. "We see most recyclers now creating goals of reducing operating costs of commodity collection; reducing cost per collected ton; eliminating light loads; avoiding overweight pickups, and winning more business with competitive pricing."

As Gates explained, for decades, market conditions have caused metal prices to ebb and flow. "We're seeing a shift in focus with more attention on efficient operations within industrial metal recycling," Gates said. "Industrial recyclers are competing to differentiate on value and price, but the savvy ones are leveraging technology to improve efficiency so they don't have to compete on margins either."

Michael Saia, chief executive officer of XTechnology Global said that one of the biggest instigators of the current metal pricing is that precious metals have seen an



Scrapyards struggle to remain profitable during challenging conditions.

increase while non precious metals have seen a decline due to a number of factors, the largest issue being China.

"This includes tariffs, and import duties on certain commodities along with rejection of other commodities such as plastics," Saia said. "The larger recyclers can afford to hold inventory to wait out market downturns, the smaller and mid-size companies cannot. Currently the market trend is going negative without any hard forecast of an uptick."

Where Saia is seeing a shift in focus is not necessarily in the type of material, but rather more attention to efficient operations within industrial metal recycling.

"Industrial recyclers are competing to differentiate on value and price, but the savvy ones are leveraging technology to improve efficiency so they don't have to compete on margins either," Saia said.

In its recent 2019 outlook report, GLE Scrap Metal, a full service recycling company with operations throughout the U.S., said "The metal recycling market is projected to grow from \$277 billion in 2015 to \$406 billion by 2020 because of the strong global economy and the increasing rates of industrialization in many growing countries."

But in September 2019, Sims Metal Management issued a trading statement which cited that drops in global scrap metal prices are poised to drive volumes lower and materially impact company profits through the first half of its 2020 fiscal year. In the statement, Alistair Field, chief executive officer and managing director at Sims said, "The escalating trade wars that I discussed at our year-end results meeting continue to reduce the demand for steel and aluminum. At that time, steel mills appeared to be managing the lower demand, but in early September they materially reduced their scrap purchases, and also their outlook for scrap purchases. This reduction in demand for scrap has driven a steep fall in prices. The current sales price results in a buy price that is potentially below the level at which it is economical for a number of our suppliers to gather and sell scrap. Alternatively, some suppliers may choose to sit on inventory until prices recover."

Field stated that, "While it is not possible to predict the

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duration of these very low prices and poor liquidity, history shows that the scrap market tends to mean-revert, so we expect it will recover over the medium term."

DECEMBER 2019

Staying Above Water

What is consistent during the current dip is that scrap metal recyclers are looking to become as efficient as possible – from improving container and asset utilization, to optimizing staff needs, to decreasing transport costs, to improving safety and DOT fines.

One way that recyclers are operating more efficiently is through data and container monitoring technology. For example, Compology provides scrap metal recyclers with rugged container cameras paired with AI-powered software to better optimize hauls, monitor materials, improve customer service, and maximize assets. What does this really mean?

According to Gates, both parties can work together, looking at the same data, to prioritize pick-ups based on the ability to remotely appraise content and identify high value materials based on market peak pricing.

"Remote monitoring allows haulers to proactively identify when containers are full and collect at optimal time to avoid light loads and overweight hauls, helping them to better compete on price and keep collection costs lower," Gates said. "At the same time, they're differentiating in customer service by providing ontime pickups at optimal weights – right pickups at the right time."

See METAL PRICES, Page B6

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Can Manufacturers Institute affirms positive sustainability attributes of the aluminum beverage can

Contributed by ROBERT BUDWAY

CMI President

The aluminum can industry is releasing this statement affirming the sustainability advantages of the beverage can following Coca-Cola chief executive officer James Quincey's comments regarding the recycled PET bottle having a "much lower" carbon footprint than the aluminum can. The carbon footprint of both containers is comparable, and the aluminum can performs significantly better than the plastic PET bottle on critical sustainability metrics including recycling rate, recycled content, and economic value.

Aluminum beverage cans are the most recycled drinks package in the world. In the U.S., the recycling rate for the aluminum beverage can of 50 percent is considerably higher than the U.S. recycling rate for the PET bottle of 26 percent. The recycling rate for aluminum cans is high in other parts of the world as well, including Brazil (98 percent) and Europe (75 percent).

The average aluminum can in the U.S. has a recycled content of 73 percent. This is also significantly higher than PET bottles in the U.S., which have less than ten percent recycled content. Most all recycled cans being transformed into new cans has a significant environmental impact. When an aluminum can is produced from recyclable material, it saves more than 90 percent of the energy used and greenhouse gas emissions produced in comparison to making that same aluminum can from virgin material.

The aluminum can has a high economic value. A recent two year average shows in the scrap market aluminum cans are worth in the U.S. more than four times PET bottles. This high economic value means recyclers want the cans back so they can get desperately needed revenue to support the processing of the many less economic viable materials in the recycling system.

All these metrics together mean the beverage can is the only container that consumers can recycle with the confidence that their container will actually be recycled into a new, recyclable product and that their action will have a significant environmental impact. The can's advantage in these metrics also mean the aluminum can is the container that can most help brands meet their ambitious sustainability goals including higher recycled content and increased recycling rates for their beverage packaging.

On top of the beverage can's advantage in these key metrics, it can be recycled infinitely without any loss in quality. Thus, the same piece of aluminum can reap these benefits over and over again. PET bottles can be recycled a finite number of times. A typical life cycle analysis does not consider the number of times that a material is re-used. The aluminum can industry has made significant progress in reducing its carbon footprint over the years. For example, a European life cycle analysis found that from 2006 to 2016 the carbon footprint of the aluminum beverage can decreased 31 percent. The aluminum can industry will continue to innovate to make further reductions.

As an industry we are encouraged that NGOs, regulators, consumers and many brands see the significant advantages of aluminum compared to plastic and are increasing selecting aluminum based on its sustainability credentials.

Ellenville Scrap site removed from superfund list

After completing all cleanup work, the U.S. Environmental Protection Agency (EPA) has deleted the Ellenville Scrap Iron and Metal Superfund Site from the National Priorities List, which is the federal superfund list of the most contaminated hazardous waste sites. Ellenville is within a designated federal Opportunity Zone – an economically-distressed community where new investment, under certain conditions, may be eligible for preferential tax treatment.

EPA has confirmed that restrictions are in place at the Ellenville Scrap Iron and Metal Superfund Site, such as restrictive covenants and environmental easements, for limiting future use of the site and the use of the groundwater to protect the cleanup. Long term activities at the site will continue, including operating and maintaining the landfill cap system that vents gas from the inactive landfill and continued monitoring of the groundwater. EPA will conduct reviews every five years to ensure the effectiveness and the protectiveness of the cleanup.

The Ellenville Scrap Iron and Metal Superfund Site is a 24 acre inactive scrap iron and metal reclamation facility that began operations in the 1950s and operated into the 1990s on Cape Road. The facility was used as a landfill, as well as a dump for tires and batteries. Following site investigations and short-term cleanups called removal actions, the site's long-term remedy

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was put in place, mainly the installation of a landfill cap. Operation and maintenance activities for the remedy are ongoing. The site was placed on the Superfund list in 2002.

The federal Superfund cleanup at the site, completed in 2011, included:

•All buildings and facilities associated with previous site operations have been demolished and removed. All other debris piles and assorted debris were assessed, sampled and removed.

•EPA dug up and consolidated contaminated soil on-site.

•The landfill was securely capped to prevent contaminants from leaching out of the landfill into the groundwater.

•Monitoring wells were installed, the landfill area fenced off and the landfill cap seeded with new vegetation. The cleanup finished in the fall of 2011.

•Placement of institutional controls on the properties associated with the site cleanup.

•Ongoing operating and maintenance activities, including groundwater sampling, for the site's remedy.

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Liberty Steel to merge into global group

A single global company with 18 million tonnes of rolled steel capacity annually is to be launched through a consolidation of GFG Alliance's steel businesses, with an ambition to lead the industry towards a carbon-neutral future.

The family owned alliance led by Sanjeev Gupta announced that Liberty Steel Group, which altogether employs 30,000 people in 10 countries, will be incorporated by the end of this year through a merger of GFG's upstream and downstream steel manufacturing, mining and distribution businesses around the world.

Liberty Steel Group will be the eighth largest steel producer outside China, with operations stretching from Australia to continental Europe, the UK and the U.S., and it will have annual sales of approximately \$15 billion. Although individual businesses will retain a high degree of autonomy, consolidated accounts will be produced and a united strategy will be developed.

At the heart of the group's mission will be an ambition to build on GFG's existing Greensteel strategy to aim for net carbon neutral status by 2030 – placing Liberty Steel Group on a pathway to become the first carbon neutral steel company in the world. This will include exploration of the best use of new technologies such as hydrogen generated from renewable power to produce steel.

The Greensteel strategy focuses on using electric arc furnaces to recycle scrap steel, rather than producing all material from scratch, as well as using renewable sources of energy. Steel from recycled scrap using fossil fuel based energy generates less than a third of the CO2 emissions compared with primary steel making, with the benefit dramatically increasing to almost zero emissions with the use of renewable power in Greensteel. Liberty's plants already recycle three million tonnes of scrap steel annually, with investment underway in electric arc furnaces in the UK, Australia and the U.S.

Liberty Steel Group will include operations drawn from Liberty House in the UK, Liberty Steel Continental Europe, Liberty Steel USA, Infrabuild and Liberty Primary Steel and Mining Australia. It will be organised in three divisions: Liberty Primary Steel, Liberty GreenSteel and Liberty Engineered Steel.



Father and son team earn steel innovation award

A father and son team, from an Australian family run business, has been named winners of the Association for Iron & Steel Technology's (AIST) 2019 T.C. Graham Prize, an international award meant to encourage development of new and innovative uses for steel.

Bruce Mullaney and his son, Logan, of InQuik Bridging Systems received the \$20,000 prize for their entry titled "Steel Semi-Modular Solution to Bridge Building," which is comprised of pre-fabricated molds made from sheet steel with reinforcing rebar matrix. The units are transported to a build site and concrete is poured once they are in place. The system reduces the amount of time, cost and manpower needed to install short-span bridges.

Upon hearing the news of their selection, Bruce shared, "We've been developing our product for a number of years; refining the design, expanding and standardizing our product range;

focusing our sales and marketing efforts; and investing in the right people to help propel the business forward both locally and internationally."

The Contest Selection Committee consisted of Tom Ferrence, business development manager, ELCON Technologies Inc.; Fred Harnack, retired, United States Steel Corporation; Shoun Kerbaugh, managing director, PiTTek Div. of Swindell Dressler International.; Lydia Stromei, president, DeAmicis & Associates LLC; and Dave Werner, president and chief operating officer, Berry Metal Co.

The T.C Graham Prize is named after Tom C. Graham Sr., a pioneering and successful steel industry executive. Graham was the founder, chairman and chief executive of AK Steel Corp., and has served as president of United States Steel Corporation and Jones & Laughlin Steel Corp. during his extensive career in steel.

Year-to-date steel shipments up

The American Iron and Steel Institute (AISI) reported that for the month of September 2019, U.S. steel mills shipped 7,767,310 net tons, a 8.3 percent decrease from the 8,472,088 net tons shipped in the previous month, August 2019, and a 0.6 percent decrease from the 7,811,745 net tons shipped in September 2018. Shipments year-to-date in 2019 are 72,577,746 net tons, a 1.6 percent increase vs. 2018 shipments of 71,468,627 net tons for nine months.

A comparison of September shipments to the previous month of August shows the following changes: cold rolled sheets, down 5 percent, hot dipped galvanized sheets and strip, down 9 percent and hot rolled sheets, down 10 percent.



Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
#1 Bushelings	per gross ton	\$256.00	258.00	265.00	275.00	262.00
#1 Bundles	per gross ton	249.00	241.00	261.00	253.00	245.00
Plate and Structural	per gross ton	243.00	231.00	242.00	249.00	250.00
#1 & 2 Mixed Steel	per gross ton	185.00	214.00	210.00	230.00	234.00
Shredder Bundles (tin)	per gross ton	122.00	130.00	139.00	141.00	143.00
Crushed Auto Bodies	per gross ton	122.00	130.00	139.00	141.00	143.00
Steel Turnings	per gross ton	80.00	81.00	90.00	132.00	124.00
#1 Copper	per pound	2.32	2.31	2.36	2.29	2.32
#2 Copper	per pound	2.15	2.12	2.19	2.18	2.19
Aluminum Cans	per pound	.55	.57	.52	.51	.50
Auto Radiators	per pound	1.35	1.23	1.33	1.43	1.45
Aluminum Core Radiators	per pound	.57	.48	.42	.40	.34
Heater Cores	per pound	1.02	1.06	1.04	1.06	1.10
Stainless Steel	per pound	.54	.51	.48	.49	.49
All prices are expressed in USD. Printed as a reader service only.						

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Steel industry groups call for action on excess capacity crisis

Nineteen steel industry associations across the world called for the governments of steelmaking economies to boost their efforts in tackling persistent global excess steel capacity.

The industry groups claimed that governments should use all available avenues, including the G20 Global Forum on Steel Excess Capacity, to: •Ensure the reduction of excess

capacity.

•Eliminate market distorting subsidies and other support measures that contribute to excess capacity.

•Uphold effective trade remedies to ensure a level playing-field driven by market forces.

•Support stronger international rules against subsidies and preferences to state controlled enterprises.

•Enhance transparency and cooperation.

•Create robust mechanisms to facilitate the exit of inefficient firms.

The industry groups commended Ulf Zumkley's statement expressing concerns about the unexpected growth of new steelmaking facilities in 2019, exacerbating global excess capacity

One night a Viking named Rudolph the Red was looking out the window when he said, "It's going to rain."

and contributing to trade tensions. Zumkley is chairman of the Organization for Economic Cooperation and Development's (OECD) Steel Committee.

The steel industry groups issuing the call for urgent action include: Steel Manufacturers Association, American Iron and Steel Institute (AISI), EURO-FER (European Steel Association), Canadian Steel Producers Association, CANACERO (the Mexican Steel Association), Alacero (the Latin American Steel Association), Brazil Steel Institute, Turkish Steel Producers Association, Republican Association of Mining and Metallurgical Enterprises, The Japan Iron and Steel Federation, European Steel Tube Association, Korea Iron and Steel Association, Specialty Steel Industry of North America, South African Iron and Steel Institute, The Cold Finished Steel Bar Institute, Association of Enterprises UKRMET-ALURGPROM (Ukraine), Russian Steel Association, Indian Steel Association, and The Committee on Pipe and Tube Imports.

His wife asked, "How do you know?" "Because Rudolph the Red knows rain, dear!"



EQUIPMENT Eddy Current SPOTLIGHT Separators

by MARY M. THORNTON

maryt@americanrecycler.com

There is an ever-growing demand to maximize the recovery or removal of metal from recycling operations, especially nonferrous. The economic viability of many plants is based upon the ability to successfully recover valuable metals such as aluminum. For example, with operations processing waste plastics, successful recycling is not possible without removing ferrous and nonferrous metal contamination. This demand is driving the evolution of the eddy current separator (ECS).

Bunting is one of the world's leading designers and manufacturers of ECS machines, magnetic separators and metal detectors with manufacturing plants located around the world. An ECS is a two-pulley conveyor system with a high-speed, multi-pole magnetic rotor positioned inside a nonmetallic head pulley. In accordance with Fleming's left-hand rule, an electric current is induced into any nonferrous metal particle entering the alternating magnetic field. This current generates its own magnetic field within the nonferrous particle that reacts with the magnetic rotor, causing it to be repelled and enabling separation.

The first ECS manufactured by Bunting dates back to the early 1990s. "Over 30 years, our technology evolved and we now offer concentric and eccentric rotor designs, featuring differing numbers of magnetic poles. Optimum separation is achieved by balancing a number of factors including, but not limited to, the particle size of the nonferrous particle, the depth of magnetic field, the number of magnetic poles, and the rotation speed of the rotor. Generally, for the separation of larger sized materials – such as aluminum cans– a deeper magnetic field with fewer magnetic poles is required. Separating smaller particles requires a shallower field, with more poles operating at a higher rotation speed," recycling plant and the ultimate objectives there, such as end-product purity, metal content and recovery. Controlled tests at one of our test facilities confirm the level of separation possible and the projected operating parameters after installation. The use of an ECS is a key technology in the global war against waste, which Bunting's engi-



enhance."

explained Michael Wilks, global marketing director.

He added, "Waste and secondary materials aren't typically uniform in shape or size. Subsequently, it is important to take a more holistic view of the separation objective before proposing a specific design of ECS. This includes assessing the operation of a neers continue to develop and

The mobile metal separator manufactured by Goudsmit Magnetics separates ferrous and nonferrous metals from bulk and recycling flows. The easy-to-position magnetic separator is designed for coarse, bulk material such as shredded wood. Ferrous items such as nails, screws, staples and hinges - as well as nonferrous materials such as door handles and strips, can also be removed from debris. The result is three separate material flows – ferrous, nonferrous and clean (inert) bulk material, which is suitable for reuse. The machine is also suitable for industrial, construction and demolition waste, refuse-derived fuels and more.

A spreading plate at the infeed point helps to break up material bulk and distributes the material over the angled feeder belt. The resulting monolayer is then ideally situated to use an overbelt magnet that pulls all iron parts from the material flow and those parts can then be diverted to the left or right. After the iron is removed, the bulk is transported to a two-meterwide eddy current separator. At that point, a powerful 22HI rotor separates nonferrous metals from the bulk material. The capacity of the metal separator is 100 m3/hour and involves a 2000 mm wide feeder belt with speed control. The robust ferrite overbelt magnet contains material guide chutes and the eddy current separator has a 2000 mm wide 22HI rotor spinning at 3000 revolutions per minute. Both discharge **See EDDY CURRENT, Page B5**

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Eddy current -Continued from Page B4



belts are hydraulically height adjustable and the mobile unit is built on a singleaxle trailer, suitable for public roads.

According to Erik Kuenen, international sales manager, "Goudsmit is dedicated to the design and manufacture of magnets and magnetic systems for metal separation, recycling, transport, lifting, holding and demagnetization in various branches of industry."

The D Neo Series manufactured by IMRO Maschinenbau provides optimal nonferrous metal recovery or material purification. The powerful machine is mainly used for treating shredder material, white goods, wood, plastic, glass, household waste, IBA and bed ash and electronic scrap. "This separator stands the test when very high recovery quotas and high levels of purity are required," noted Luis Orbezo, mechatronic engineer. The machine offers the following: a patented, infinitely variable pole system $(0 - 20^\circ)$, a patented, removable shell ring for easy replacement of a GFK drum shell, an infinitely variable

IMRO Maschinenbau GmbH divider, 40 poles comprising the strongest magnet material available, an ultra large diameter on the inductor pole drum, the highest magnetic strength available and a 1.4 kHz frequency.

"We produce eddy current separators with different types of rotors. Stronger magnets and higher pole changing frequencies are used for finer particles than for those used to recycle material comprising coarser particles. Optimal machine applications can be engineered with any combination of numbers, arrangement of neodymium magnets and pole system rotational speed. For more than 25 years, we've provided excellent solutions for all of the technical challenges in the recycling industry. No matter what your recycling requirements are, IMRO is your partner and full-service provider, always ready to assist you. Our numerous areas of expertise offer our clients a wide range of services from a single source," Orbezo stated.





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HITACHI TECHNOLOGY DIGS IN WITH NEW WHEEL LOADERS

With its new Dash-6 line of wheel loaders, Hitachi offers three new models.

The ZW140-6 weighs in at a nominal 25,640 lb. with its 2.7 yard GP bucket. The 26,960 lb. ZW150-6 hoists a 3.1 yard GP bucket. Both are driven by a 141 hp (104 kW) Cummins engine and are also offered with a selection of optional material handling buckets and utility forks. The ZW150PL-6 is a modified version of the ZW150-6, featuring Hitachi's Parallel Lift arms.

Meeting the need for "do-it-all" machines in the 25,000 lb. range, these loaders deliver strength and reliability.



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SWEET MANUFACTURING BUILDS ENCLOSED BELT CONVEYOR

Sweet Manufacturing Company's fully-enclosed belt conveyor with a patent-pending design features auxiliary belt alignment rollers, idler access doors, heavyduty liners, a self-cleaning tail and built-in sensor ports. The hip roof allows snow and rain to easily slide off.

Available with 24" to 60" belts, the EBC is designed for capacities up to 72,000 BPH. The conveyor features a heavy duty 45° CEMA C6 idler that is sealed for life and easy to maintain. U.S. prime G140 galvanized steel and a snub pulley are standard and a number of options are available for customization.



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TUFFBOXX CREATES PICNIC ANIMAL PROOF WASTE CONTAINERS

The single-stream PICNIC animal proof waste container is ideal for commercial and public spaces where wildlife are present.

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WSM'S OFFERS NEW PEAT MOSS BALE BREAKER AND FLUFFER

Increase peat moss recovery and reduce material handling by feeding 4' to 8' bales directly into WSM's revolutionary Bale Breaker. The unit effectively deconstructs compressed bales and can operate as a standalone unit or be integrated into the soil processing line.

WSM's unique Peat Moss Fluffer is a multi-rotor unit that further breaks up the peat moss and fluffs it prior to hydration. It includes spring operated stators to bypass oversized material and the discharge conveyor can be equipped with hydration spray bars. The Peat Moss Fluffer can be integrated for a complete, sealed unit – allowing for continuous operation.

Novelis Reports record second quarter shipments and strong financials

Novelis Inc., a leader in aluminum rolling and recycling, reported net income attributable to its common shareholder of \$123 million for the second quarter of fiscal year 2020, compared to \$116 million in the prior year period. Excluding tax-effected special items, such as \$32 million for restructuring actions in the current period, the company reported net income of \$160 million in the second quarter of fiscal 2020, compared to \$122 million in the prior year period. This 31 percent increase is primarily due to higher Adjusted EBITDA and a lower effective tax rate.

Adjusted EBITDA increased 5 percent over the prior year period to \$374 million in the second quarter of fiscal 2020, primarily driven by higher shipments as well as favorable price and product mix, partially offset by less favorable recycling benefits due to lower aluminum prices. Adjusted EBITDA per ton reached \$448 in the quarter, as compared to \$440 in the prior year period.

Net sales decreased 9 percent from the prior year period to \$2.9 billion for the second quarter of fiscal 2020, driven by lower average LME aluminum prices

Metal prices

Continued from Page B1

To understand their return on investment and predict profitability, haulers can now monitor container time on site to determine the value each client provides vs. the opportunity cost of each container lingering longer than it needs to. At an aggregate level, haulers can see how many containers are deployed at client sites vs. how many in inventory. Creating baselines is important for understanding the rate of container fullness at each client and the cost and profit from each client location.

On the Horizon

According to the Institute of Scrap Recycling Industries, China's continued effort to reform its solid waste management system, means that China enacted stricter standards for scrap imports beginning in March 2018. What's more, China implemented new import permitting requirements for certain ferrous and nonferrous metal scrap beginning July 2019 and a ban on stainless steel and other metallic scrap will begin in 2020.

Specifically, in July 2019 China began restricting imports of eight additional types of scrap metal, including high-grade copper and aluminum scrap, as well as types of steel scrap.

Although the scrap metal industry is facing challenging times, Gates predicted there is going to be a lot more resiliency against pricing fluctuations

Novelis Inc., a leader in aluminum ng and recycling, reported net me attributable to its common eholder of \$123 million for the secquarter of fiscal year 2020, comd to \$116 million in the prior year od. Excluding tax-effected special

> The company reported \$112 million of free cash flow for the second quarter of fiscal 2020. On a year-to-date basis, fiscal 2020 free cash flow of \$18 million includes a significant increase in capital expenditures year-over-year to \$300 million mainly to support strategic investments in incremental rolling, recycling and automotive finishing capacity. Free cash flow before capital expenditures improved 46 percent over the prior year to \$318 million, driven primarily by higher Adjusted EBITDA and a lower use of working capital year-todate. Each of the three previously announced significant capacity expansion projects underway in the U.S., China and Brazil continue to progress on time and on budget.

> As of September 30, 2019, the company reported a strong total liquidity position of \$1.8 billion, and reduced its net leverage ratio to 2.4x as compared to 2.8x in the prior year period.

> because technology allows recycling companies to operate with more margin. "Additionally there will be more transparency between scrap suppliers and recyclers as a result of the data remote monitoring provides, impacting the entire supply chain and even business model of scrap recycling," Gates said.

> Remote monitoring, both at the container level and at an aggregate level, helps both the suppliers and recyclers avoid pickups with poor quality material or contaminants that raise the weight and cost per collected ton.

"Safety is a number one priority for our customers and the industry. Preventing safety hazards, such as propane tanks, remotely through an image, keeps hazardous material out of the shredders or furnace where it can explode," Gates said. It also prevents overages and overweight pickups, keeping unsafe, heavy trucks off the road.

Saia stressed that although scrap metal recycling continues its downward trend, precious metals are trending positive. "Ferrous and nonferrous are in a downtrend," Saia said. "Based on the Purchasing Managers' Index (PMI), which is decreasing, this will have a negative effect on pricing due to soft demand. But precious metals including gold, silver, palladium and platinum will always garner attention, even more so as gold has been trending up."

AK Steel transfers over \$600 million in pension funds

AK Steel has purchased a group annuity contract from Massachusetts Mutual Life Insurance Company (MassMutual) to transfer approximately \$615 million of its pension obligations.

"We are pleased to have completed another annuity transaction, which brings the total pension obligations we have transferred to highlyrated annuity providers to about \$1.1 billion over the past three years," said Roger K. Newport, chief executive officer of AK Steel. "This is another important step in de-risking our balance sheet, while continuing to demonstrate our commitment to ensuring our retirees' benefits are secure."

This annuity contract permanently transfers the responsibility to pay pension benefit obligations of about \$615 million for approximately 4,250 retirees from the company's pension plan to MassMutual. There will be no change to the pension benefits for any plan participant as a result of this action. The transaction was funded entirely with pension plan assets. As a result of this transaction, the company expects to record a non-cash pension settlement charge of approximately \$25 million in the fourth quarter of 2019.

Beginning March 1, 2020, Mass-Mutual will begin making benefit payments along with providing ongoing administrative services to the specific plan participants.

With this transaction, AK Steel has completed transfers of approximately \$1.1 billion in pension obligations in aggregate, representing nearly 20,000 retirees, to highly-rated annuity providers since 2016.

Spotlight.

Novelis invests \$36 million to expand and upgrade recycling capabilities in Georgia

Novelis Inc., a leader in aluminum rolling and recycling, broke ground on a \$36 million investment to expand and upgrade recycling capacity at its Greensboro, Georgia facility. The investment includes adding state-ofthe-art equipment for aluminum scrap recycling, a new baghouse for improved dust mitigation and enhanced designs for safer and more efficient traffic flow. The company expects to complete the project by fall of 2021.

The investment will expand Novelis' capabilities in automotive closedloop recycling, a process to take aluminum scrap created during stamping and recycle it for new vehicle production. Closing the loop preserves the value of the alloy, reduces cost, minimizes environmental impact and establishes a secure supply chain. The facility will also continue to recycle used beverage cans for the beverage packaging industry.

"As automakers continue to choose aluminum as the sustainable material of choice, we are investing in our recycling capabilities to increase the amount of recycled content in new vehicles and reduce carbon emissions," said Marco Palmieri, president, Novelis North America. "This investment aligns with our purpose of shaping a sustainable world together and demonstrates our commitment to helping our customers meet their sustainability targets."

In addition, the upgrades will also enhance the facility's safety systems. For example, the new design will more effectively separate pedestrian walkways from mobile equipment traffic.

Opened in 1980, Novelis' Greensboro facility is responsible for pioneering the majority of Novelis' recycling technology.

United States Steel Corporation commits to a reduction in greenhouse gas emissions

United States Steel Corporation took another step in the execution of its strategy to become the "best of both" in the steel industry with the announcement of its plans to reduce greenhouse gas emissions intensity across its global footprint. The company has set a goal to reduce its global greenhouse gas emissions intensity by 20 percent, as measured by the rate of carbon dioxide (CO2) equivalents emitted per ton of finished steel shipped, by 2030 based on 2018 baseline levels. This target will apply to U. S. Steel's global operations.

"Committing to a global greenhouse gas intensity reduction target is central to U. S. Steel's strategy to become a world-competitive 'best of both' integrated and mini mill steel company," said U. S. Steel president and chief executive officer David B. Burritt. "These reductions will be equivalent to the amount of CO2 being generated by more than 850,000 average-sized homes each year. By creating targeted carbon reduction initiatives to accelerate our transformation toward a future of sustainable steel, we create value for all stakeholders."

U. S. Steel's greenhouse gas emissions intensity reduction goal will be achieved through execution of multiple initiatives. These include the development of electric arc furnace steelmaking at U. S. Steel's Fairfield Works and at Big River Steel, the first LEED-certified steel mill in the nation, in which U. S. Steel recently acquired a minority interest with an option to acquire the remainder over the next four years. Electric arc furnace steelmaking relies on scrap recycling to produce new steel products, capitalizing on steel's status as the most recycled material on earth. Further carbon intensity reductions are expected to come from the company's introduction of state-of-the-art endless rolling and casting technology and construction of a cogeneration facility at its Mon Valley Works announced in May, as well as implementation of ongoing energy efficiency measures, continued use of renewable energy sources and other process improvements.





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