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2017



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Technology advances in the waste and recycling industries

by MAURA KELLER

mkeller@americanrecycler.com

Driverless sanitation vehicles, recyclables sorting robots and landfill drones. Twenty years ago, these were little more than amusing catch phrases bandied about at conferences by recycling and waste industry players claiming to see the future. No one believed they would become a reality or that technology within the industry was to be seen as a competitive advantage. Today, recycling and waste companies of every size are reexamining their priorities and their processes with a single goal in mind; to streamline the their processes and gain the competitive advantage by "embracing the next technological advancement."

At a recent discussion on the future of the waste industry in Washington D.C., International Solid Waste Association (ISWA) president, Antonis Mayropoulos noted that the industry will need to embrace technological innovations to make operations more efficient, environmentally sound and safe.

In addition to such innovations as fleet management software and cloudbased applications that are currently being used for logistics and internal communications, the increased use of technology and data analysis will continue to streamline industry operations. In fact, Mavropoulos noted that companies like Volvo are planning to introduce driverless garbage trucks and other various robots that can make collecting, transferring and sorting waste more efficient and advanced.

"The waste industry is experiencing an influx of technological innovation: advanced routing software, new and improved compaction equipment, more fuel efficient and alternative fuel trucks, smart dumpsters with fill sensors among many other great advancements," said Matthew Hollis of Elytus, a company that incorporates its innovative technology solution, WINStream, that transparently connects trash haulers to clients, audits waste streams for savings and environmental optimization, and helps reduce the operational waste of time, money and human resources.

As Hollis explained, additional technologies are causing breakthroughs in Elytus' ability to recycle items that weren't recyclable prior to the creation of these additional resources from waste.

"As our country works to reduce the overall volume of generated waste and divert more waste from landfills, the cost of disposal will eventually rise," Hollis said. "However, by leveraging these technologies vendors can reduce service



The Motiv All-Electric Powertrain, installed on the Sacramento electric refuse truck, transforms a chassis meant to be diesel powered to one with zero emission all electric drive, giving fleets an easier transition to a fossil fuel

times, increase route density and create other operational efficiencies allowing them to maintain a sustainable margin for their business while serving the needs of the customer."

Taking advantage of these various technological advancements will allow vendors to stay competitive in the marketplace. Solid waste generators will continue to become savvier and look to increase recycling and divert more waste. Through understanding and the adoption of these technologies, vendors can provide the customers what they want while also maintaining an operating margin that's healthy for their business.

"The best thing service vendors and operators can do is evaluate the long-term cost of the technology," Hollis said. "Understand the true operational impact of what they're choosing to source and whether or not it will create a lasting positive to their bottom line."

Environmental Impact & Big Data

Data has become so prominent in the waste management industry that tracking and analyzing data has become an intrinsic part of the process. Now stakeholders expect the waste and recycling industry to use the data and insights to drive positive outcomes from the waste management process and quantify its value.

Since regulatory standards have tightened and the public is concerned about the environmental impact of waste disposal, best practices in waste management are evolving. One of the ways that technology is helping the waste industry is with improvements in the planning, implementation, and monitoring of these

waste disposal processes. The technologies and methodologies, which make all of this analysis possible, have been developed and refined by thought leaders in the green tech industry.

Omar Abou-Sayed, founder and chief executive officer of Advantek Waste Management Services, said that "big data" is becoming the standard for the safe disposal of solid waste.

"It is no longer acceptable to gather the bare minimum of data required by regulation: a continual flow of real time information is required for proper analysis and diagnostics," Abou-Sayed said. "Facilities are turning to cloud-based tech solutions to manage this data and mine it for relevant insights on the health and safety of an injection well for solid waste disposal." Empowered by this information, operators can make smart decisions about the management of their facilities.

Technology & Safety

Technological advancements within the recycling and waste industry go handin-hand with safety issues facing the industry.

Lytx's flagship product, DriveCam, offers video telematic solutions to improve fleet safety and reduce associated costs.

One pattern the company has seen is the rise of driver distractions as autonomous features continue to enter the cab. For example, a driver may use a technology's cue to tell them when they're drifting out of the lane, rather than monitoring it themselves. This type of behavior is especially dangerous for

See TECHNOLOGY, Page 4

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New York City's commercial recycling rate far below other leading U.S. cities

NYC is 22 percent with other leading cities as high as 77 percent

rules intended to make recycling easier and more transparent for New York City businesses, the commercial sanitation industry failed to meaningfully increase recycling in 2016. New York's commercial recycling rate remains a low 22 percent. The low rate along with photographic evidence suggests that some private waste haulers and processors are illegally landfilling materials intended for recycling.

Increasing this rate will be critical if New York is to meet its targets of sending zero waste to landfill by 2030. It will help the city meet its climate commitment of reducing emissions by 80 percent by 2050. Recycling and composting also create far more jobs per ton of waste processed than landfilling and incineration.

Based on a review of official reports from the approximately 30 NYC waste and recycling facilities primarily handling commercial waste (i.e. non-residential waste) located within the five boroughs, Transform Don't Trash NYC finds that the industry recycles less than a quarter (22 percent) of the commercial waste stream, roughly on par with their performance in 2015 (construction recycling rates are customarily calculated separately). In New York City, it is unlawful for waste haulers and processors to landfill materials intended for recycling.

New York City's commercial recycling rate is significantly lower than the 35 percent national average recycling rate, and lags far behind leading cities such as San Jose and Seattle, which have reported commercial recycling rates of 77 percent and 62 percent in recent years, and San Francisco which has reported a 58 percent overall diversion rate.

Every year, New York City's commercial buildings and businesses are estimated to generate about 3.5 million tons of solid waste. This is in addition to the additional 3.5 million tons per year that are collected by the New York City Sanitation Department; the TDT analysis focused exclusively on the city's commercial, not residential, waste stream.

The new findings show that current regulations and voluntary commitments from sanitation companies are not enough to raise recycling rates. The

Despite new commercial recycling rently being developed by the New York trucks as black-bag waste on late-night City Department of Sanitation is expected to take full effect in 2022, will give city regulators the authority, and sanitation companies the accountability, necessary to raise New York City's commercial recycling rate.

> Done right, the zoning system will require private carters to meet recycling and waste reduction targets through long-term contracts that will encourage greater investments in recycling and

> "Under the status quo, commercial sanitation companies clearly don't see it as in their interest to increase recycling rates or collaborate with their customers to maximize recycling and reduce waste," said Justin Wood, director of Strategic Research at New York Lawyers for the Public Interest (NYLPI). "This has got to change. The new zoning system can get us onto the path of zero waste by 2030 if we ensure that incentives are aligned to reward waste reduction and promote substantial investments in better technology by private waste companies."

> "The results of this new analysis are disappointing. Decades after the obligation for commercial carters to recycle much of the waste they collect. most of the city's private carters have implemented this policy half-heartedly at best. New York's commercial carting industry will never come close to achieving the city's ambitious waste and air quality improvement goals without dramatic change," said Eric A. Goldstein, New York City Environment director at the Natural Resources Defense Council.

> The findings are drawn from best available data from DSNY and selfreporting by the commercial waste industry, which may overestimate the rate of commercial recycling in NYC. The TDT-NYC coalition advocates that the commercial hauling industry receive more oversight to truly improve recycling rates and achieve the City's Zero Waste Goals.

Illegal Commingling by Haulers

Many New York City business owners surveyed by Transform Don't Trash NYC noted that they sometimes instruct their staff to carefully separate designated recyclable materials such as glass, metal, and plastic containers from the waste stream only to observe that private commercial waste zone system, cur- haulers throw recyclables into the same collection routes.

This practice conflicts with new NYC commercial recycling rules that took effect in July 2016.

Private haulers continue to openly engage in this practice. There are photographs of commercial waste trucks in which black-bag garbage and commercial recyclables (in clear or blue bags) are mixed. The photos were taken more than six months after the implementation of the new commercial recycling rules.

Organic Waste

The waste industry's limited progress in meeting the demand for composting and anaerobic digestion capacity continues to suppress the commercial recycling rate, despite the fact that about one-third of disposed commercial waste is estimated to be potentially compostable or digestible organic material.

In 2016, private transfer stations reported diverting only small amounts of organic material away from landfill (less than 1 percent of total material handled) and much of this small amount may have been delivered by DSNY's residential compost collection trucks rather than private haulers.

Glass

Landfilling recyclable glass continues to be the norm for private haulers

and waste facilities despite the fact that glass has been designated as a recyclable material by the city since the 1990s. designated Landfilling materials intended for recycling is inconsistent with the law.

Recycling and waste transfer facilities owned by major NYC haulers such as Five Star Carting, Mr. T Carting, Royal Waste Services, and Action Environmental report to the Department of Environmental Conservation did not report any glass recovery in 2016.

In fact, out of more than 20 New York City Material Recovery Facilities reporting to DEC in 2016, only 3 reported recovering any glass material from the waste stream. Notably, only one of these three facilities handles waste from private commercial waste haulers, with the others handling DSNYcollected recyclables and bottle glass from deposit refund centers.

Although the waste industry complains that glass is not a profitable material to recycle, a new study by the Closed Loop Foundation shows that by making an investment in modern sorting equipment, recycling facilities can substantially reduce the costs of processing glass from \$35 per ton to \$8 per ton by effectively recycling glass instead of exporting it to landfills.

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City of Long Beach to transform commercial waste and recycling system

voted overwhelmingly to issue a five year notice to waste haulers, setting the clock ticking as it explores the best options for transforming the city's current commercial waste and recycling

Don't Waste Long Beach – a coalition of environmental, community, food rescue, and worker rights organizations - applauded the move and advocated for an exclusive franchise system as the best way to achieve zero waste. The proponents say an exclusive franchise system would allow the city to hold waste hauling companies accountable by requiring high safety and environmental standards, efficient routing, quality service, guaranteed access to recycling and eventually green waste collection. Long Beach is one of the few cities in Califor-

Long Beach City Council members nia of its size that does not have a local donors, like restaurants and bakeries, zero waste goal, and the recycling rate in the commercial sector is less than 20 percent.

> Robert Nothoff, director of Don't Waste Long Beach, said, "We're happy that our city leaders are working to establish region-wide standards in the commercial and multi-family sector. In order to be the green city we aspire to be, we need to transform our system here in Long Beach by increasing access to recycling for all city residents and businesses, and establishing efficient truck routing which will reduce air and noise pollution."

> Food waste is another issue that is important to the coalition. Diana Lara, a coordinator at Food Finders Long Beach stated, "For the last 10 years, I have worked to collect food from different

and have it delivered to different organizations in Long Beach that provide meals to the most vulnerable members of our community." She emphasized the need for change adding, "I think that it is wrong that tons of food is wasted due to our inefficient waste system, while there are many kids in our communities who go to bed on an empty stomach. Long Beach needs to transform the way it deals with waste and ensure that all residents have access to recycling and compost collection at home and at work to help address this problem."

Coalition members also highlighted the opportunity for green job creation that could be generated by increasing the city's recycling levels.

Technology

■Continued from Page 1

waste and recycling drivers, who need to be on constant alert for children running into the street, wires hanging between roads, trash and recycling receptacles in the street, or any other unforeseen scenario that they see every day.

"We all know that being a solid waste driver is a dangerous job, and organizations within the waste industry - whether private companies or municipalities – are looking for more efficient ways to measurably improve safety and reduce risk without burdening their operations teams," said Lytx's Vice president of Safety Services, Del Lisk.

Safety technologies like video telematics, and the programs they power help to improve safe driving behaviors resulting in preventing costly collisions before they happen, and more importantly, getting drivers home safely at the end of each shift.

"Video telematics in the vein that Lytx delivers identify unsafe driving behaviors and giving fleet managers the tools and insights needed to coach and improve performance," Lisk said. "Video telematics pulls double-duty by providing the video evidence and related vehicle data to help exonerate drivers and protect companies in the event of a false or fraudulent claim."

One Lytx client, City of Denver Solid Waste, initially adopted the DriveCam program to reduce fuel usage, but inevitably found that a data-based training program could significantly improve their drivers' performance. The director Lars Williams explained that changing distracted driving behaviors already ingrained in the younger generation of drivers, particularly the usage of cellphones in the cab, is a nearly impossible task - until you introduce video telematics into their training process, which both holds drivers accountable for their actions and shows them how this dangerous behavior can result in deadly incidents. Not only did the City of Denver see a return on its entire \$100,000 state-awarded grant within the first year in fuel savings alone, but the number of collisions fell 50 percent over 30 months.

According to Lisk, improving safety and maintaining a strong safety culture is critical for solid waste organizations, especially given the job's dangerous nature, and fleet managers can use all the help they can get managing that risk. In addition to keeping workers safe, fleet managers are always looking for ways to boost efficiencies and productivity. Video telematics technologies are not only helping keep workers and the communities they serve safe, they're helping companies improve their bottom line and maintain a positive brand reputation.

"We've also seen our event recorders used by waste and recycling workers in unique ways, including capturing video evidence of things encountered on the job," Lisk said. For example, waste collectors have manually turned on their Drive-Cam event recorders to show hazardous materials wrongfully put out for collection, wires or other obstructions in the way of their pickup, or to prove they were at a site at a certain time.

On the Horizon

During the past 50 years, technology has dramatically changed how the waste and recycling management industry does business. Technology advancements have driven companies to reinvent themselves and their internal processes. This reality, coupled with the everchanging nature of the technology arena, has resulted in a continuous revolving door of technology updates and equipment improvements throughout the industry.

With each new day, technology brings recycling businesses exciting opportunities for growth and success. As businesses grow, they encounter tough decisions regarding how to best use the technology available. Should they hire an online consultant for their technological needs? How frequently must software applications be updated? And so on.

As operators identify the areas within their business that could use improvement - whether collision frequency, route or fuel inefficiencies, or reputation management - they should understand these are the areas where technology can and should have a real impact.

Lisk recommended looking for technology platforms that can take advantage of innovations as they occur, and that can be sized according to your organization. It's also smart to consider the operational burden of the proposed technology.

"Another consideration is whether the program delivers insights instead of raw data," Lisk said. "Without analytics to make sense of data generated, technology can sometimes create more work and more confusion for an organization and make it more difficult to effect change."

Events Calendar

August 8th-11th

2017 ADS International Convention & Tradeshow. Wynn Las Vegas, Las Vegas, Nevada.

816-285-0810 • www.diesel.org

August 9th-11th

Missouri Recycling Association Conference. Tan-Tar-A Resort, Osage Beach, Missouri.

866-667-2777 • www.moraconference.org

August 21st-23rd

Waste Conversion Tech Conference & Tradeshow. Hyatt Regency Mission Bay Spa & Marina San Diego, California. 850-386-6280 • wasteconversionconference.com

August 23rd-25th

Agricultural Plastics Recycling Conference & Trade Show. Hyatt Regency Mission Bay Spa & Marina San Diego, California. 850-386-6280 • www.agplasticconference.com

September 12th-14th

The Battery Show Exhibition & Conference 2017. Suburban Collection Showplace, Novi, Michigan.

855-436-8683 • www.thebatteryshow.com

September 18th-20th

ARC's Annual Conference & Trade Show. Best Western Inn of the Ozarks, Eureka Springs, Arkansas.

866-290-1429 • www.recycleark.org

September 25th-27th

SWANA's WASTECON, Baltimore Convention Center, Baltimore, Maryland. 800-467-9262 • www.swana.org



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Owner, Publisher and Editor

ESTHER G. FOURNIER news@AmericanRecycler.com

Editorial Focus Section Editor, Production and Layout

> DAVID FOURNIER, JR. david@AmericanRecycler.com

Production and Layout

mary@AmericanRecycler.com

Marketing Representatives

MARY M. COX maryc@AmericanRecycler.com MARY E. HILL mary@AmericanRecycler.com

Circulation Manager

DONNA L. MCMANUS donna@AmericanRecycler.com

Writers and Contributors

DONNA CURRIE dcurrie@AmericanRecycler.com

MARK HENRICKS mhenricks@AmericanRecycler.com

MAURA KELLER mkeller@AmericanRecycler.com

RON STURGEON

rons@rdsinvestments.com

Production Offices

900 W South Boundary, Bldg 6 Perrysburg, OH 43551-5235 877-777-0043 fax 419-931-0740 www.AmericanRecycler.com

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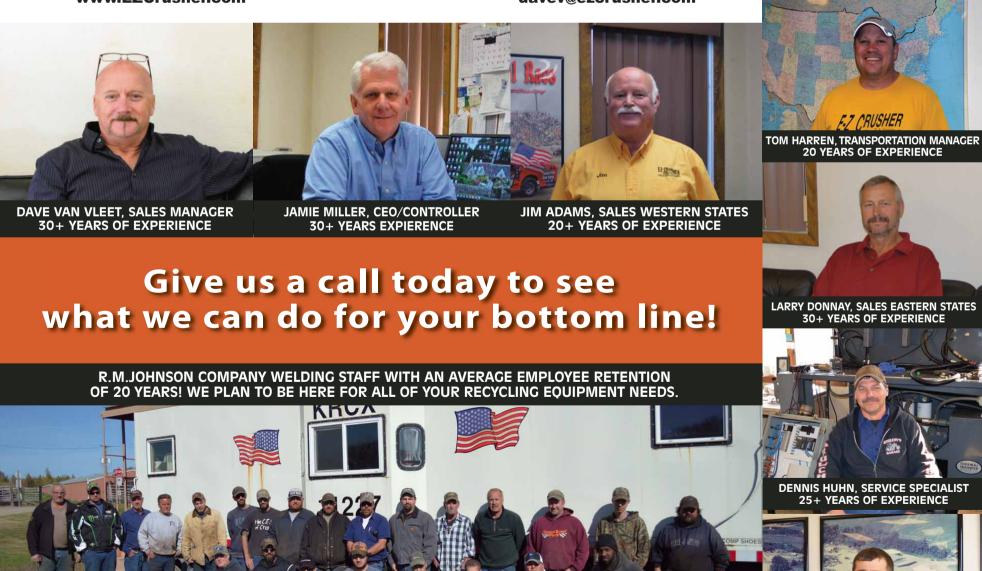
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ISRI offers free safety training as part of a grant program

The Institute of Scrap Recycling Industries (ISRI) recently announced the formation of a "Hazard Recognition in Recycling" safety training program, a series of free classes across the country. The program is the result of \$140,000 in funding ISRI received as part of the Susan Harwood Training Grant Program administered by the Occupational Safety and Health Administration (OSHA).

"The offering of a free Hazard Recognition in Recycling training program further emphasizes that safety is a core value for ISRI," said Terry Cirone, vice president of safety for ISRI. "This program is unique in that is designed specifically for the recycling industry. Every company in the industry, including those who are not ISRI members, should take advantage of this training. We are extremely grateful to OSHA for distinguishing ISRI's qualifications to deliver high-quality safety training and the importance of hazard recognition in recycling.'

The course is designed for recyclers across all commodities who want employees to learn more about hazard recognition and mitigation in the operations environment. This includes:

- •How to do a PPE hazard assessment;
- •How to recognize the hazards of and safely work around mobile equipment;
 - •The importance of proper PPE;

•An understanding of the importance of the control of hazardous energy (LOTO);

- •Good housekeeping practices;
- •How to recognize fire hazards; and
- •Hazard communication on-site.

Those attending the class also learn what a hazard assessment is and through group work, how to build a PPE job hazard assessment. Each class is approximately 7.5 hours long and are open to both ISRI members and nonmembers for no cost. Classes have already been held in Massachusetts, California, and Texas. Additional sessions are currently scheduled in North Carolina and Alabama, with more being added.

In addition to the class, the funding includes the development of safety training materials that are offered in English and Spanish.

OSHA's Harwood Grant Program awards grants annually to nonprofit organizations on a competitive basis. According to OSHA the focus of the program includes providing "training and education for workers and employers on the recognition, avoidance, and prevention of safety and health hazards in their workplaces."

For a link to additional information, including how to host a class at your facility, view this article on www.AmericanRecycler.com.

NJ DEP awards \$20.2 million in grants for litter cleanups

awarding \$20.2 million in annual Clean Communities grants to help municipalities and counties conduct litter cleanups to beautify New Jersey's communities and roadsides.

The NJ DEP is awarding more than \$17.9 million to eligible municipalities, and more than \$2.2 million to the state's 21 counties.

As required by law, the nonprofit New Jersey Clean Communities Council oversees the reporting requirements for the program. Grants are funded by a legislated user-fee on manufacturers, wholesalers and distributors that produce litter-generating products. Disbursements to municipalities are based on the number of housing units and miles of municipally owned roadways within each municipality.

"We are hopeful that municipalities and counties will use Clean Communities funding wisely to pay for volunteer and paid cleanups, badly needed equipment purchases, enforcement activities, and education," said Sandy Huber, executive director of New Jersey Clean Communities Council.

Municipalities receiving the largest grants are:

Newark, (Essex County) \$419,929; Jersey City, (Hudson County) \$387,918; Toms River (Ocean County) \$218,712;

The Christie Administration is Paterson (Passaic County) \$187,966; Hamilton Township (Mercer County) \$184,817; Edison Township (Middlesex County) \$173,899; Elizabeth City (Union) \$172,361; Woodbridge Township (Middlesex County) \$170,727; Brick Township (Ocean County) \$165,826; Middletown (Monmouth County) \$149,431; Cherry Hill (Camden County) \$147,341; Trenton (Mercer County) \$138,428; Clifton (Passaic County) \$134,719; Vineland (Cumberland County) \$129,290; Franklin Township (Somerset County); \$128,063; Berkeley Township (Ocean County) \$126,853; Camden (Camden County) \$123,316; and Gloucester Township (Camden County) \$121,778.

The counties receiving the largest grant awards are: Ocean, \$208,244, Cumberland, \$181,596, Burlington, \$169,866, Bergen, \$147,997 and Gloucester, \$136,881.

Activities funded by Clean Communities grants include cleanups of stormwater systems that can disperse trash into streams, rivers and bays; volunteer cleanups of public properties; adoption and enforcement of local antilittering ordinances; beach cleanups; public information and education programs; and purchases of litter collection equipment such as receptacles, recycling bins, anti-litter signs and graffiti removal supplies.

For a complete list of municipal and county grant awards, www.njclean.org.

Republic Services recognized with recycler award

Republic Services disclosed that the Oregon Recycling Association has recognized the Pacific Region Compost (PRC) facility with the Recycler of the Year Award. The award was presented at the Association's annual conference in Gleneden Beach, Oregon.

Republic Services is one of the leading providers of organics collection and processing in the state of Oregon. In 2010, the PRC became the first Oregon compost facility to be approved for type 3 organics composting, including proteins, dairy and all food scraps. As the largest composting facility in Oregon, the PRC processes more than 120,000 tons of residential yard waste, residential organics and commercial food waste each year, producing a nutrient rich compost used for area agricultural, landscaping and gardening purposes.

Through predecessor companies, Republic has served the Corvallis area for more than 40 years. Republic employs 320 people in the Benton, Linn, and Marion counties who serve more than 100,000 residential customers. Republic also owns and operates a landfill, 4 transfer stations, 6 recycle centers, 170 collection trucks, and the PRC facility in the area.



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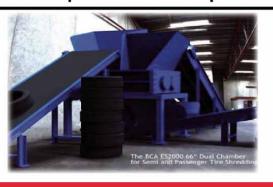


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American Recycler

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Worker injury causes fine

The recycling company that operates glass recycling facilities for Ontario's municipal blue box collection, deposit return program and the Beer Store pleaded guilty and has been fined \$65,000 after a worker suffered a permanent injury caused by running machinery.

NexCycle Industries Ltd. is a corporation with a workplace located in Brampton. At this industrial location, workers recycle beer bottles and beer cans. The company also uses beer cases to create bales of cardboard for recycling.

On November 3, 2015, a worker was attempting to clear a cardboard jam in a cardboard baler. A baler is a machine used to compress and bundle recyclable materials such as cardboard, paper, plastics and metal. The materials are made into dense and consistently shaped bales for easy storage and transport.

Before attempting to clear the jam, the worker did not lock out the machine. The worker put one hand into the machine. The pinch point was not physically guarded, and the worker's wrist became caught behind the ram of the machine, causing a permanent injury.

Section 24 of Regulation 851 – the Industrial Establishments Regulation – states that a machine with an exposed moving part that could endanger a worker must be guarded to prevent access to the moving part.

Justice of the Peace Darlene Florence imposed a fine of \$65,000 and imposed a 25 percent victim fine surcharge as required by the Provincial Offences Act.

Associations partner to address solid waste challenges in the industry

The Northeast Waste Management Officials Association (NEWMOA) and The Northeast Recycling Council (NERC) have agreed to partner to help advance sustainable materials management in the Northeast over the next five years. The NEWMOA & NERC Joint Strategic Action Plan, 2018 – 2022 identifies the following areas for collaboration:

•Food scraps reduction, recovery, and management.

•Recyclables collection and impacts on manufacturing and end-users.

•Product stewardship.

•Climate and impacts on the recycling and solid waste infrastructure.

•Construction and demolition materials.

The plan identifies key strategies and actions the two organizations will take jointly to address these solid waste challenges.

"The Connecticut Department of Energy & Environmental Protection (CT DEEP) applauds NERC and NEWMOA for their vision and collaboration in adopting their Joint Strategic Action Plan," said DEEP Commissioner Robert Klee. "These nationally recognized interstate organizations have a proven record of success with projects that support and advance our work efforts here in Connecticut. Working together to implement the joint NERC and NEW-MOA strategic plan is closely aligned with the mission of DEEP and our goal of doubling the recycling rate in CT to 60 percent.'

NEWMOA is a non-profit, non-partisan, interstate association whose membership is composed of the state environment agency programs that address pollution prevention, toxics use reduction, sustainability, materials management, hazardous waste, solid waste, emergency response, waste site cleanup, underground storage tanks, and related environmental challenges in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. The Association provides a strategic forum for effectively solving environmental problems through collaborative regional initiatives that advance pollution prevention and sustainability, promote safer alternatives to toxic materials in products, identify and assess emerging contaminants, facilitate adaption to climate change, mitigate greenhouse gas sources, promote reuse and recycling of wastes and diversion of organics; support proper management of hazardous and solid wastes, and facilitate clean-up of contaminant releases to the environment.

To download a copy of the action plan, view this article on www.AmericanRecycler.com.

Constellium releases sustainability report and targets

Constellium N.V. released its 2016 Annual Business and Sustainability Performance Report, evaluating its performance against its 2020 targets.

Most sustainability objectives are on track, namely:

•Increase beverage recycling rate: Constellium endorsed industry led objectives and Europe is on track to reach the 80 percent recycling rate target set for 2020. Constellium, has significantly increased their used beverage cans recycling capacity in Muscle Shoals, Alabama with the installation of a stellium is implementing corrective actions to address them with the objective

•Strengthen their communities. More than half of Constellium plants organized a community program in 2016, with their U.S. sites being particularly active.

•Build a standard for aluminum. Constellium has actively participated in finalizing the Aluminum Stewardship Initiative (ASI) certification program, which will be available in early 2018.

The following sustainability objectives need some improvement, and Con-

stellium is implementing corrective actions to address them with the objective of getting back on track by the end of 2017:

•Reduce production waste sent to landfill. As they focused on better measuring production wastes, they identified unreported waste streams.

•Improve energy efficiency: While they improved slightly year over year by 0.3 percent, they remain under their target due largely to the temporary effects of ramp-ups and operational changes.



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Lakeshore Recycling wins safety improvement award

(LRS), a recycling, waste and construction services provider, has been awarded the 2017 Biggest Safety Improvement Award by Solid Waste Association of North America (SWANA). This award was granted in the Communication, Education & Marketing Division, in which LRS displayed exemplary actions in education and communication outreach to revamp the safety program, establish trust within employees and strengthen the safety culture.

Vice president of risk management John Sliwicki leads the team that implements safety initiatives at LRS and joined the company in June 2016. Shortly after his arrival, Sliwicki made key moves and hires within the risk management department to better manage company-wide safety.

"When employees are handling multiple projects, getting a job done can

Lakeshore Recycling Systems become a priority over safety. If we can create a mentality where safety is a value, our employees will understand that all of those other priorities sit second chair to that value of safety," said Sliwicki. "Our safety driven efforts reflect the hard work and positive attitudes that our employees uphold."

> New safety initiatives have been implemented to increase training, communication and recognition, which extends to LRS employees, customers and the community. LRS continues to enhance safety efforts by collaborating with waste safety organizations to give presentations that are structured to provide resources for other waste management companies. These speaking events are designed to improve the overall risks the industry faces daily.

> Award winners will be honored at the ISWA World Congress & WASTE-CON® 2017 on September 27, 2017.

Kalamazoo switches to single stream

The Kalamazoo, Michigan, City Commission approved a 10 year \$4.59 million contract with Republic Services for single stream recycling.

Beginning in October the city will switch from dual to single stream, meaning recyclables can be put in the same cart for pickup.

Rather than weekly dual stream recycling pickup, recyclables will be picked up twice a month, resulting in savings for the

Styrofoam container ban proposed

Los Angeles City Councilmembers Paul Koretz (CD5) and Bob Blumenfield (CD3) introduced a motion calling on the City of Los Angeles to take the lead after SB-705 (Allen) proposed state ban on expanded polystyrene (EPS) foam food containers (more commonly known as Styrofoam) stalled. Councilmembers Curren Price and Mike Bonin seconded the motion that asks for the Department of Sanitation to provide a feasibility study of banning polystyrene foam from the city.

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NWRA appoints industry advocate as president

Association (NWRA) has appointed Dr. Darrell K. Smith as the trade association's president and chief executive officer. The NWRA board of trustees announced the selection following a considered and comprehensive search for a leader who understands the invaluable contributions the waste and recycling industry makes to America, who can position the organization as an advocacy powerhouse on the national, state and local stage, and who can provide direction, motivation and new energy to the mission of the trade group.

Dr. Smith has arrived at a time when the industry faces numerous challenges relative to public policy and community relations. His skill sets include public policy advocacy for heavy industry, grassroots activation, trade association management and growth, public relations, and a technical background in safety and environmental processes. His unique qualifications, coupled with past employment in the waste industry, positions him to drive industry successes in partnership with the communities that so

The National Waste and Recycling heavily rely on efficient waste management services.

> The appointment comes as the waste and recycling collection occupation ranks fifth in the nation for injuries, accidents and fatalities, due in large part to inattentive motorists and distracted driving. Dr. Smith had a highly successful career as a safety professional prior to entering the public policy arena, and he looks forward to playing a role in reversing the industry's safety record.

> Dr. Smith is coming to NWRA from the Industrial Minerals Association -North America, part of the mining industry, and has previously served as an industry advocate for the petroleum and chemical industries. Before entering the public policy world, he worked in several industries including hazardous waste. He has a bachelor's degree from the Citadel, a master's degree in environmental science from the University of South Carolina, and a doctoral degree from George Mason University in environmental conflict and public policy. He resides in the District of Columbia.

Applications now available for 2017 Governor's Environmental **Excellence Awards Program**

Leaders in New Jersey's environmental, academic, business, science, government, nonprofit and youth sectors are encouraged to showcase their environmental accomplishments by submitting nominations for consideration in the annual Governor's Environmental Excellence Awards (GEEA) program.

The GEEA program recognizes outstanding environmental performance, program and projects throughout the state. The award honors individuals, businesses, institutions, communities, organizations, educators, youth and others who have made significant contributions to environmental protection in New Jersey. Since its establishment in 2000, the program has recognized 160 winners for their accomplishments.

"This award program honors those among us whose commitment and dedication to environmental excellence is unwavering," said Department of Environmental Protection Commissioner Bob Martin. "The efforts of these winners not only demonstrate outstanding leadership, but how their accomplishments benefit the people of New Jersey.'

Nominations may be submitted through September 29, 2017 in these categories: Clean Air, Water Resources, Healthy Ecosystems, Innovative Technology, Land Conservation, Healthy and Sustainable Communities, and Healthy and Sustainable Businesses and Environmental Education. The Environmental Education category is divided into two areas - one for adult-led education initiatives and one for projects that are student-led or have succeeded because of a high level of student involvement.

The GEEA program is sponsored by the DEP, NJEIT and the New Jersey Corporation for Advanced Technology, in partnership with the New Jersey League of Municipalities. Award winners will be honored at a luncheon and program to be held in December in Tren-

Completed 2017 applications are due to the DEP by 5 p.m. September 29, 2017.

> For additional information, view this article on www.AmericanRecycler.com.

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WASTE

Further cleanup of lead-contaminated properties in New Jersey proposed

The U.S. Environmental Protection contamination in the soil at levels above Agency (EPA) has proposed an expansion in a cleanup plan to continue removing lead contaminated soil from a residential development previously owned and built by the Tempo Development Group in West Deptford, (Thorofare) New Jersey.

EPA added the Tempo development to the Matteo & Sons, Inc. Superfund site in October of 2016 after finding that residential properties on nearby Birchly Court, Woodlane Drive, Oakmont Court and Crown Point Road were impacted by lead contamination from the disposal of crushed battery casings. Lead is a toxic metal that can impact a child's ability to learn and cause a range of other serious health problems.

"It is unfortunate that years before the homes were built there, a prior entity apparently dumped crushed battery casings on the property," said acting regional administrator, Catherine McCabe. "The EPA has moved quickly to address contaminated areas and to help home owners understand the risks from the lead underneath and around their homes. EPA has removed nearly 2,000 tons of lead-contaminated material from three residential properties and we will continue the work until the job is done."

In November 2015, during sewer repair excavation work at a residential property on Birchly Court, buried battery casings were discovered. In March 2016, the New Jersey Department of Environmental Protection referred the discovery to EPA for further investigation. EPA collected soil samples from the yards of the affected properties and confirmed lead health based standards. Former operations at the Matteo site included crushing and recycling batteries, scrap metal recycling, and landfilling.

Under the EPA's proposed cleanup plan, soil in yards contaminated at levels that pose a potential risk to people's health will be removed and disposed of properly at a facility licensed to handle the waste. Excavated areas will be covered with clean soil. EPA will work to minimize any potential disruptions to residents during the cleanup. It is possible that some residents may need to be temporarily relocated while work is performed. The cleanup proposal requires deed restrictions be placed on public right-of-way areas, such as roads, to ensure that future construction or road work activities do not disturb the battery casings and contaminated soil buried below the roads. Under the proposal, the EPA will conduct a review of the cleanup every five years to ensure its effectiveness.

The investigation and cleanup of the Matteo site has been conducted in stages by EPA and the New Jersey Department of Environmental Protection. The current cleanup proposal addresses additional residential properties in and around the former Tempo Development area of the Matteo site. The nearby Matteo & Sons, Inc. facility on Crown Point Road is undergoing a long-term investigation of the nature and extent of contamination, including potential impacts to surface water and sediment in Hessian Run. Hessian Run will be addressed in a later phase of work.

Republic Services increases usage of natural gas in fleet

increase its usage of renewable natural gas (RNG) by three times what it used in 2016 through an expanded agreement with Clean Energy. This enables Republic to reduce its fleet emissions by approximately 110,000 metric tons of CO2e (carbon dioxide equivalent) over a three-year period, which is equal to planting 2.8 million trees or removing 23,200 cars from the road. RNG has the lowest carbon intensity of all commercially available transportation fuels.

Clean Energy's RedeemTM brand of RNG fuel will be deployed across Republic's CNG fleet in 20 states. Redeem is derived from biogenic methane or biogas, which is methane that is generated by the decomposition of organic waste in landfills or digesters. The methane gas is then processed, purified and sent into the

Republic Services, Inc. will interstate natural gas pipeline and made commercially available to Clean Energy customers.

> As part of the company's Blue PlanetTM sustainability initiative, Republic is continuing to build durable practices and programs across its sustainability platform to further improve its environmental and social impacts through decreased vehicle emissions, innovative landfill technologies, use of renewable energy, community engagement and employee growth opportunities.

> Nationwide, Republic operates a fleet of more than 2,500 CNG vehicles and 38 natural gas fueling stations. Republic's CNG fleet helps to save roughly 18 million gallons of diesel fuel annually. Republic has set a company sustainability goal of reducing fleet greenhouse gas emissions by 3 percent by 2018.

Los Angeles Sanitation launch Green Ribbon Council for waste program

Los Angeles Sanitation and the City of Los Angeles launched a Green Ribbon Council for recycLA- the City's new commercial and multifamily residential solid waste, recycling, and food recovery program.

Los Angeles Sanitation and the City of Los Angeles launched the Green Ribbon Council created for the City's new citywide commercial and multifamily residential solid waste, recycling, and food recovery program - recycLA. The Green Ribbon Council will bring together business, civic and community leaders to help increase public awareness about the program and to ensure that recycLA meets customer service goals. The program aims to increase recycling in the city to divert 90 percent of waste going to landfills by 2025.

Beginning on July 1, 2017, 80,000 commercial and multi-family customers will begin a coordinated multi-month transition from a currently unregulated system to one that is dependable and sustainable. The new system divides the city into 11 zones that will be served exclusively by a single service provider, meaning fewer trucks congesting neighborhoods and less wear and tear on streets. It will also ensure strong customer services, predictable and protected rates, and much needed infrastructure and equipment improvements.

After hearing from Deputy Mayor Barbara Romero, the Mayor's Chief of Legislative & External Affairs Greg Good, Board of Public Works vice president Heather Repenning, and LA Sanitation general manager and director Enrique C. Zaldivar, the program was reviewed in great detail for the attendees, which ranged from representatives for environmental activists and universities, to business, hotel, grocery and apartment owners' associations

EPA awards \$213,000 to New Mexico

The U.S. Environmental Protection Agency (EPA) recently awarded \$213,511 to the New Mexico Environment Department (NMED) for waste programs.

The grant provides funding under the Resource Conservation and Recovery Act (RCRA), which regulates solid and hazardous waste. The money will support NMED's RCRA program activities, including enforcement, hazardous waste inspections of facilities, corrective action, granting permits, state authorization, and program management.



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American Recycler

WASTE

Virginia reports increase in solid waste volume

The Virginia Department of Environmental Quality released its annual report on solid waste management in Virginia. The report includes the amounts of solid waste managed in Virginia in 2016, and the amounts and sources of solid waste generated outside the Commonwealth.

The total amount of solid waste received at Virginia facilities during 2016 increased by about 1.3 million tons from 2015. Solid waste includes municipal solid waste, construction and demolition debris, vegetative and yard waste, and other types of waste. The total amount of solid waste from outside Virginia rose about 700,000 tons to 6.1 million tons. The total amount from within Virginia rose slightly to 15.9 million tons.

Other findings of the report include: •Of the 22.04 million tons of solid waste reported in 2016, about 12.8 million tons were municipal solid waste, which is trash from households and businesses.

- The total amount of municipal solid waste generated outside Virginia was about 3.5 million tons, slightly less than in 2015. Maryland, Washington, D.C., North Carolina, New York and New Jersey accounted for 98.8 percent of all waste received from out-of-state sources.
- Of the total solid waste managed in Virginia in 2016, about 13.3 million tons were disposed of in landfills, and about 2 million tons were incinerated. The rest was managed by other means, including mulching and recycling.

The full solid waste report is available on the DEQ website at www.deq.virginia.gov.

I hope when I inevitably choke to death on gummy bears people just say I was killed by bears and leave it at that.



PAPER

AF&PA releases updated paper reports for May

The American Forest & Paper Association released its May U.S. paper reports.

Containerboard

Containerboard production was 3.4 percent higher compared to May 2016. The month-over-month average daily production compared to April 2017 was 0.7 percent higher.

The containerboard operating rate for May increased from 97.1 percent to 99.3 percent, which was 4.2 percent higher compared to May of last year.

Printing-Writing Paper Report

According to the May 2017 Printing-Writing Monthly report, total printing-writing paper shipments decreased two percent in May compared to May 2016. The uncoated printing-writing grades posted year-over-year shipment declines in May, while the coated grades either increased or remained level. Total printing-writing paper inventory levels decreased 1 percent from April 2017.

•Shipments of coated free sheet (CFS) papers were the bright spot in May compared to last year, increasing 2 percent; the third year-over-year increase in the last 12 months. U.S. imports of CFS papers increased 3 percent year-over-year in April while exports of CFS papers decreased 1 percent year-over-year in April.

•Coated mechanical (CM) paper shipments were flat year-over-year in May; increasing by less than one percent, making it the third year-over-year increase in the past 12 months. Imports of CM decreased in April, down 14 percent compared to April 2016 and exports of CM were down 22 percent in April.

•May uncoated free sheet (UFS) paper shipments declined by 2 percent, the lowest year-over-year decrease in the past 12 months. Imports of UFS increased by less than one-half of one percent year-over-year in April while exports of UFS papers increased 1 percent year-over-year in April.

•Shipments of uncoated mechanical (UM) papers decreased 12 percent year-over-year in May for the eleventh consecutive month. Imports of UM decreased 11 percent year-over-year in April while exports of UM increased 10 percent in April.

Boxboard Report

Total boxboard production decreased 2.9 percent when compared to May 2016, and decreased 0.3 percent from April.

Unbleached Kraft Boxboard production increased over the same month as last year and increased compared to April.

Total Solid Bleached Boxboard & Liner production decreased when compared to May 2016, and decreased compared to April.

The production of Recycled Boxboard decreased compared to May 2016, but increased when compared to last month.

Paper stock section of the ISRI Scrap Specifications Circular changes

The Paper Stock Industries (PSI) Chapter of the Institute of Scrap Recycling Industries (ISRI) is seeking input on proposed changes to the guidelines for recovered paper transactions. PSI, as part of an ongoing effort to update industry specifications, is proposing to streamline the specifications to prevent any potential confusion as these specifications have been more globally adopted by the international industry.

The open comment request follows PSI's Summit SPECtacular held in April,

focused on revamping the Guidelines for Paper Stock portion of the ISRI Scrap Specifications Circular that can be on pages 26-28 and 34-36.

The PSI Chapter invites commentary from interested parties as to the changes being proposed. Please contact, Bernie Lee (blee@isri.org) or a PSI Board Member for more information about the salient changes or to weigh in on any specific changes.

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RUBBER

RMA expands focus on mobile society

Data reveals the U.S. tire industry creates 700,000+ U.S. jobs

The Rubber Manufacturers Association, the national trade association for tire manufacturers that produce tires in the U.S., announced a relaunch under the new banner of the U.S. Tire Manufacturers Association (USTMA). In addition to the new banner, USTMA unveiled its newly designed and rebranded website, www.USTires.org, and released new economic impact figures detailing the industry's impact on job creation and the U.S. economy overall.

As the USTMA, the U.S. tire manufacturing industry will continue its significant contribution to the U.S. economy, job creation and engineering safe, sustainable tires.

"Our mobile society depends on tires – from the safety of our families on the road to the tire industry's significant contribution to our nation's economy. As part of our continued commitment to share the important role the tire industry plays in our country, we are excited to announce our relaunch as the U.S. Tire Manufacturers Association," said Anne Forristall Luke, USTMA president and chief executive officer. "Our member companies are constantly in pursuit of making safer and more sustainable tires through technology and innovation. We believe it is important to carry a name that truly captures this mission."

In addition to tire safety and sustainability, the U.S. tire manufacturing industry also bolsters the U.S. economy with well-paying jobs and economic output that ripples across the economy and helps sustain communities.

Highlights from the recently completed economic impact study of the U.S. Tire Industry include:

•The U.S. tire manufacturing industry is a \$148.4 billion dollar industry.

•The U.S. tire manufacturing industry is responsible for more than 737,000 jobs in the US.

•The U.S. tire manufacturing industry directly supports more than 284,000 U.S. jobs through manufacturing, distribution and retailing, and is responsible for more than 450,000 additional U.S. jobs in supplier and induced activities.

With many scientists and engineers at work developing tomorrow's tires, USTMA's members unlock the value of a mobile society by producing advanced, high quality tires that make driving easier, safer, smarter and more sustainable. USTMA, as the voice of the tire manufacturing industry and its members, works to drive a safer, more sustainable future.

INTERNATIONAL

Canadian Bottled Water Association rejects Wynne Government's fee increase for water taking permits

The Canadian Bottled Water Association strongly rejects the recent announcement by the Ontario government that beginning August 1, 2017, water bottlers will pay \$503.71 for every million liters of groundwater taken.

"Yesterday's massive fee increase for water bottling companies that take ground-water runs counter to what's really needed to protect and conserve water for future generations," said Elizabeth Griswold, Executive Director of the Canadian Bottled Water Association. "The entire bottled water industry in Ontario represents only 0.2 percent of all water takers in the province. My question to the government is what about the other 99.8 percent? To properly sustain the resource, everybody has to be involved."

"It's clear that the government has simply picked a nice round number to charge and developed the justification for it afterwards. The government is limited by law to charging only what covers the costs associated with administering water management programs. New, unrelated items such as outreach and research have absolutely nothing to do with the actual program costs," added Griswold.

The announcement represents a 13,500 percent increase from the existing fee which has been in place since 2009 and comes at a time when the Ontario government is searching for ways to not only attract businesses to the province but also make life more affordable for Ontarians, not more expensive.

"Right now, over 70 percent of Ontario households consume bottled water," said Griswold. "This decision by the government not only puts Ontario jobs at risk, but it also means consumers will likely start paying more for a healthy hydration product where demand is clearly growing."

"This sets a dangerous precedent," says Sandy Gott, a co-owner of Ice River Springs, North America's only closed-loop recycling beverage company. "It's not only unfair, but clearly there's a political agenda here. We are a very small user of water in a clean, rural industry providing a healthy product. In our view, it's just another fee we will have to pass on to the consumer and that's unfair. All users should pay at some level. With this and the cost of power, it's becoming very tough to do business in Ontario."

GLASS

Quebec City MRF marks a new era in glass recycling

Éco Entreprises Québec (ÉEQ) inaugurated innovative glass processing equipment as part of the implementation of its Innovative Glass Works plan. The Quebec City Materials Recycling Facility (MRF), which is operated by Société VIA, is among the five centers to receive equipment to lead experimental pilot projects with the aim to find a solution for 100 percent of the glass collected.

Combining sorting and cleaning equipment in a single glass processing system, the technology developed by Krysteline Technologies and the related equipment installed by Machinex will enable sorting centers to produce highquality glass that meets the needs of conditioners and recyclers, which will now be able to more easily and cost effectively reintegrate the glass into new products, including innovative ecomaterials. The installation of this new equipment in the Quebec City MRF has required total investments of \$2,280,000 from ÉEQ (\$1.9 M), Société VIA (\$300,000) and Ville de Québec (\$80,000).

"For a large sorting center such as ours, which processes over 10,000 tons of glass per year, the benefits of this new technology are significant," confirmed Jean-Sébastien Daigle, president and chief executive officer of Société VIA, the manager of the Quebec City MRF.

Ontario grocery chains use technology to reduce waste

Flashfood, a mobile app allowing grocery locations to sell surplus food directly to consumers at a massive discount prior to discarding, has partnered with Longo's in downtown Toronto for a 3 month beta to reduce their food waste.

Flashfood users see deals on perfectly good surplus food on their phone, usually with three days to a month until the best before date, at massively reduced prices. Users get notified on their phone when new deals are available, pay through their phone, and pick their purchase up at the Flashfood zone in store – same day. Flashfood users then check out just like they normally would while at the store.

Flashfood launched in January with Farm Boy at their Beaverbook location in London, which is still running. Farm Boy has plans to add more stores with Flashfood in the next few weeks in London Ontario.

In their partnership with Flashfood, Farm Boy and Longo's have diverted over 1,500 meals from landfill – the equivalent GHG emissions to driving more than 1,800km.

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METALS

Steel imports increase 2.5 percent in May

Based on preliminary Census Bureau data, the American Iron and Steel Institute (AISI) reported that the U.S. imported a total of 3,434,000 net tons (NT) of steel in May 2017, including 2,574,000 NT of finished steel (up 2.5 percent and 1.8 percent, respectively, vs. April final data). Year-to-date (YTD) through 5 months of 2017, total and finished steel imports are 15,740,000 and 12,050,000 NT, up 22.2 percent and 14.2 percent, respectively, vs. the same period in 2016.

Key finished steel products with significant import increases in May compared to April include cut lengths plates (up 46 percent), tin plate (up 45 percent), plates in coils (up 33 percent), line pipe (up 29 percent), standard pipe (up 19 percent), hot rolled bars (up 15 percent) and reinforcing bars (up 12 percent).

Major products with significant YTD import increases vs. the same period last year include oil country goods (up 227 percent), cold rolled sheets (up 38 percent), sheets and strip all other metallic coatings (up 36 per-

U.S. IMPORTS OF FINISHED STEEL MILL PRODUCTS
DV COUNTDY OF ODIOIN (The consendence New Yorks)

BY COUNTRY OF ORIGIN (Thousands of Net Ions)								
	MAY 2017	APR 2017	2016 Full Year	2017 Annualized	% Change 2017 Annual vs. 2016			
SOUTH KOREA	329	321	3,812	3,695	-3.1%			
TURKEY	154	186	2,416	2,740	13.4%			
JAPAN	127	142	1,798	1,561	-13.2%			
TAIWAN	72	119	1,083	1,192	10.0%			
GERMANY	142	112	1,192	1,154	-3.2%			
VIETNAM	69	37	960	852	-11.3%			
INDIA	86	47	312	824	163.7%			
CHINA	80	67	862	813	-5.7%			
All Others	1,515	1,496	13,903	16,092	15.7%			
TOTAL	2,574	2,528	26,338	28,921	9.8%			

cent), standard pipe (up 34 percent), sheets and strip hot dipped galvanized (up 27 percent), mechanical tubing (up 26 percent), line pipe (up 25 percent), hot rolled bars (up 24 percent) and tin plate (up 23 percent).

In May, the largest volumes of finished steel imports from offshore were from South Korea (329,000 NT, up 3 percent from April final), Turkey (154,000 NT, down 17 percent), Ger-

many (142,000 NT, up 26 percent), Japan (127,000 NT, down 11 percent) and India (86,000 NT, up 84 percent). For the first five months of 2017, the largest offshore suppliers were South Korea (1,539,000 NT, down 3 percent vs. the same period in 2016), Turkey (1,141,000 NT, up 14 percent), Japan (650,000 NT, down 8 percent), Taiwan (497,000 NT, up 67 percent) and Germany (481,000 NT, down 1 percent).

Kripke acquires Mid South Alumunium

Kripke Enterprises, Inc. (KEI) a nonferrous scrap metal brokerage head-quartered in Toledo, Ohio has acquired aluminum coil distributor Mid South Aluminum, Inc. based in Jackson, Tennessee.

In 1995 Alan Sallee Jr. established Mid South Aluminum specializing in the sales and distribution of coil and accessories to the gutter and downspout industry. In 2008 Mid South expanded into wide width coil. Today, Mid South Aluminum is one of the country's leading aluminum coil distributors for home building, sign & lighting manufacturing, outdoor sheds, and patio enclosures.

Founded in 1993, Kripke Enterprises Inc. is America's Premier Aluminum Brokerage with locations in Toledo Ohio, Jackson Tennessee, and Boca Raton Florida. In 2017, KEI and Mid South Aluminum combined sales will reach over \$160 million.

JSW Steel receives board approval for plate mill modernization

JSW Steel (USA) Baytown, Texas, has received preliminary board approval, contingent upon securing governmental financial support, to proceed with a full-scale modernization project. The new state-of-the-art discrete plate mill will significantly increase product offerings.

As part of JSW's vision for the future, the plate mill modernization is the first phase of a much larger project under consideration by the board. The second phase includes the construction of a new state-of-the-art melting and casting facility in the U.S. utilizing new

technologically superior and eco friendly processes. A location has not yet been determined for the melting and casting facility. If fully implemented, the new melting and casting facility is expected to create 500 new high wage American jobs over the course of three

years. It would also increase JSW's ability to supply defense, as well as energy pipeline and domestic infrastructure projects, a goal of the Trump administration for both national security and economic reasons.



American Recycler August 2017, Page A15

METALS

Nucor reports increased sales

Nucor Corporation disclosed consolidated net earnings of \$323.0 million, or \$1.00 per diluted share, for the second quarter of 2017. By comparison, Nucor reported net earnings of \$356.9 million, or \$1.11 per diluted share, for the first quarter of 2017 and net earnings of \$243.6 million, or \$0.76 per diluted share, for the second quarter of 2016.

In the first half of 2017, Nucor reported consolidated net earnings of \$679.9 million, or \$2.11 per diluted share, compared with consolidated net earnings of \$331.2 million, or \$1.03 per diluted share, in the first half of last year.

Included in the first quarter of 2017 earnings are inventory related purchase accounting charges of \$9.8 million associated with the acquisitions of Southland Tube and Republic Conduit.

Nucor's consolidated net sales increased 7 percent to \$5.17 billion in the second quarter of 2017 from \$4.82 billion in the first quarter of 2017 and increased 22 percent compared with \$4.25 billion in the second quarter of 2016. Average sales price per ton in the second quarter of 2017 increased 5 percent from the first quarter of 2017 and increased 17 percent from the second quarter of 2016.

Total tons shipped to outside customers were 6,748,000 tons in the second quarter of 2017, a 2 percent increase from the first quarter of 2017 and a 5 percent increase from the second quarter of 2016. Total second quarter steel mill shipments increased 3 percent from the first quarter of 2017 and increased 7 percent from the second quarter of 2016. Second quarter of 2017 downstream steel products shipments to outside customers increased 9 percent from the first quarter of 2017 and increased 1 percent from the second qurter of 2016.

In the first half of 2017, Nucor's consolidated net sales increased 25 percent to \$9.99 billion, compared with \$7.96 billion in last year's first half, and total tons shipped to outside customers increased 6 percent from the first half of 2016, while average sales price per ton increased 19 percent.

The average scrap and scrap substitute cost per ton used during the second quarter of 2017 was \$313, an increase of 10 percent from \$284 in the first quarter of 2017 and an increase of 35 percent compared with 2016.

Overall operating rates at our steel mills increased to 90 percent in the second quarter of 2017 as compared to 89 percent in both the first quarter of 2017 and the second quarter of 2016. Operating rates for the first half of 2017 increased to 90 percent as compared with 84 percent for the first half of 2016.

Imports continue to negatively impact the U.S. steel industry. Through the first half of 2017, finished steel imports have increased an estimated 15 percent compared to the same period last year and account for an estimated 27 percent share of the U.S. market. The industry continues to pursue trade cases to combat unfairly traded imports. Final determinations issued earlier this year against cut-tolength steel plate imports from twelve countries are having a positive impact as steel imports of these products have decreased in the first six months of this year compared to the same period last year.

In June, Nucor's board of directors declared a cash dividend of \$0.3775 per share payable on August 11, 2017 to stockholders of record on June 30, 2017. This dividend is Nucor's 177th consecutive quarterly cash dividend.

ISRI replies to China's intent to ban certain scrap imports

China notified the World Trade Organization (WTO) of its intent to ban the import of certain scrap materials by year end. Among the items included on the list are most scrap plastics ("including polymers of ethylene, styrene, vinyl chloride and PET..."), mixed paper and slags and drosses. In response, ISRI President Robin Wiener released the following statement:

"ISRI has already notified the Office of the United States Trade Representative and the U.S. Department of Commerce on the devastating impact such a ban will have on the global recycling industry, especially because ISRI has heard that China is considering additional notifications in the future on other scrap materials. Upon receiving this information, ISRI immediately briefed U.S. officials in preparation for the U.S.-China Comprehensive Economic Dialogue (CED) in Washington.

"With more than \$5.6 billion in scrap commodities exported from the United States to China last year alone, the trade in specification-grade commodities – metals, paper and plastics – between the United States and China is of critical importance to the health and success of the U.S. based recycling

industry. If implemented, a ban on scrap imports will result in the loss of tens of thousands of jobs and closure of many recycling businesses throughout the United States.

"The scrap recycling industry is the first link in the global manufacturing supply chain. Recycled materials are key inputs for the production of new, usable commodities in value-add production. In any given year, approximately one-third of the scrap recycled in the United States is prepared for shipment to the export market, and China is the recycling industry's largest customer. This includes more than \$1.9 billion in scrap paper (13.2 million tons) and \$495 million in scrap plastics (or 1.42 million tons).

"More than 155,000 direct jobs are supported by the U.S. industry's export activities, earning an average wage of almost \$76,000 and contributing more than \$3 billion to federal, state, and local taxes. A ban on imports of scrap commodities into China would be catastrophic to the recycling industry."

ISRI will continue to follow this development and provide information as soon as it is available.



					•	•
Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
#1 Bushelings	per gross ton	\$205.00	\$218.00	\$229.00	\$285.00	\$345.00
#1 Bundles	per gross ton	208.00	218.00	230.00	259.00	350.00
Plate and Structural	per gross ton	214.00	205.00	227.00	251.00	279.00
#1 & 2 Mixed Steel	per gross ton	187.00	192.00	218.00	240.00	250.00
Shredder Bundles (tin)	per gross ton	170.00	165.00	163.00	162.00	200.00
Crushed Auto Bodies	per gross ton	170.00	165.00	163.00	162.00	200.00
Steel Turnings	per gross ton	90.00	95.00	100.00	190.00	192.00
#1 Copper	per pound	2.35	2.32	2.39	2.30	2.51
#2 Copper	per pound	2.24	2.27	2.18	2.19	2.31
Aluminum Cans	per pound	.59	.60	.62	.65	.60
Auto Radiators	per pound	1.61	1.62	1.59	1.60	1.65
Aluminum Core Radiators	per pound	.60	.58	.55	.60	.59
Heater Cores	per pound	1.12	1.15	1.14	1.24	1.35
Stainless Steel	per pound	.57	.49	.56	.54	.54

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

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

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[&]quot;I am a master of fast calculations."
"Okay then, what is 758 times 642, divided by 5?"

[&]quot;22!"
"Ha ha, that's SO wrong!"
"Might be, but it was fast!"

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Salvaging Millions

by Ron Sturgeon Autosalvageconsultant.com

Tools for Success - How much does procrastination really cost us?

listed more than 25 tactics to increase your business success, all of them based on my experience.

In another article in the series, I talk about having a sense of urgency. This article is about the flipside of urgency, procrastination. It's easy to rationalize putting off something you know you should be doing to build your business. It is particularly easy for entrepreneurs because we're busy and the day-to-day work of getting and keeping clients often gives us the perfect excuse to ignore projects that have strategic payoffs.

One of my favorite sayings is that you don't know what you don't know. It certainly applies to procrastination. Some years back, I served on the board of an internet gaming company in which I was an investor. This firm had big plans. It intended to grow and to become the dominant player in its segment of historical air warfare

The company had a good game and the game's creators understood the technology necessary to make game play seem realistic. The technical people assured the board and investors that the firm's system was robust enough to handle 500,000 players, even though they had only between 2,000 and 5,000 players on any given day at the time.

"Don't worry. It will scale," they said. However, we didn't know what we didn't know.

At the time, Microsoft featured a computer game on their home page every day. One day, they chose our game! That day, 100,000 players arrived to try our game in the space of an hour. Our server went down and stayed down until the following morning, when our usual 2,000 to 5,000 players showed up.

We had our big day to shine and we were not ready because we hadn't prepared for success. The company limped along and eventually failed, but it could have been very different had the team not put off testing whether our systems really would

Recently, I was helping another business owner. I had been trying to get him to focus on updating his website because online presence is a crucial part of marketing in his industry. He was always "working on it," but he never seemed to reach the goal posts. A year passed and he still had the same dated site up.

One day, this owner received the sort of surprise business owners

The first article in this series dream about. He was booked to appear as a guest on national television. The show has a nightly audience composed of millions of customers interested in what he sells. He had a week to do what I had been asking him to do for more than a year and couldn't get it done.

How much did the procrastination cost him? It's hard to know. Certainly, the appearance gave him the opportunity to get as much traffic in a day as he had gotten in several years. Not being ready cost him the chance to shine.

How can you ensure you will be ready to take advantage of life's opportunities? The simple answer is to have a sense of urgency in all you do. Had this businessperson broken down the web project into its component steps and set a goal with a deadline for each, he would have had a beautiful site done when opportunity arrived.

A goal without a deadline is a dream. It's fine to dream, but take the goal setting steps and practice urgency so that you can make the most of your share of golden opportunities. When you are working on goals, you can always make course corrections. If you miss - adjust the deadline and keep right on driving for the goals that matter.

Much of the success that I have had in business and life comes from knowing that I don't have to do it perfectly. You don't either. You only need to do enough to win and very often focusing 50 percent effort in the right areas is enough to get you 80 percent or better of the way to victory. Sometimes, details matter, but other times they only slow you down.

A plan that is 80 percent right and gets implemented and adjusted based on real world results is much better than a plan that never gets off the ground because the person trying to make it happen insists on having the perfect plan before taking action. Don't let your desire for perfection stop you from starting. After all, you can't win unless you play.

Think about the strategic initiatives that are in your "I'll finish it someday" pile. How many of them could you get to an 80 percent level if you broke them down, set deadlines, and accepted some imperfection along the way?

Whatever the project or initiative you're dreaming of set some deadlines and get going. Set a date now cycle back and check on it, fine tuning if necessary – later.

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.

METALS

Steel import market share 29 percent in June

Based on the Commerce Department's most recent Steel Import Monitoring and Analysis (SIMA) data, the American Iron and Steel Institute (AISI) reported that steel import permit applications for the month of June totaled 3,502,000 net tons (NT). This was a 3.7 percent decrease from the 3,637,000 permit tons recorded in May and a 2.0 percent increase from the May preliminary imports total of 3,434,000 NT. Import permit tonnage for finished steel in June was 2,724,000, up 5.8 percent from the preliminary imports total of 2,574,000 in May. For the first six months of 2017 (including June SIMA permits and May preliminary data), total and finished steel imports were 19,243,000 NT and 14,775,000 NT, up 22.5 percent and 15.2 percent, respectively, from the same period in 2016. The estimated finished steel import market share in June was 29 percent and is 27 percent year-to-date (YTD).

Finished steel imports with large increases in June permits vs. the May preliminary included reinforcing bars (up 190 percent), standard rail (up 30 percent), heavy structural shapes (up 30 percent), sheets and strip all other metallic coatings (up 26 percent), hot rolled

sheets (up 23 percent), structural pipe and tubing (up 20 percent), mechanical tubing (up 15 percent), cold rolled sheets (up 12 percent) and oil country goods (up 11 percent). Products with significant year-to-date (YTD) increases vs. the same period in 2016 include oil country goods (up 237 percent), cold rolled sheets (up 36 percent), standard pipe (up 33 percent), sheets and strip all other metallic coatings (up 29 percent), line pipe (up 29 percent), mechanical tubing (up 27 percent), hot rolled bars (up 24 percent), sheets and strip hot dipped galvanized (up 24 percent) and tin plate (up 15 percent).

In June, the largest finished steel import permit applications for offshore countries were for South Korea (381,000 NT, up 16 percent from May preliminary), Turkey (319,000 NT, up 107 percent), Japan (139,000 NT, up 10 percent), Taiwan (132,000 NT, up 84 percent) and Germany (123,000 NT, down 13 percent). Through the first six months of 2017, the largest offshore suppliers were South Korea (1,921,000 NT, down 1 percent from the same period in 2016), Turkey (1,461,000 NT, up 22 percent) and Japan (790,000 NT, down 9 percent).

ISRI releases updates to the Scrap Specifications Circular

The Institute of Scrap Recycling Industries (ISRI) recently updated the Scrap Specifications Circular to include the board-approved new nonferrous specifications, a slight modification to a paper specification, and the deletion of certain expired paper specifications. The additions and changes to the specifications are as follows:

Nonferrous

•Barley No. 1 COPPER WIRE (Page 4)

•Berry No. 1 COPPER WIRE (Page 4)

•Birch No. 2 COPPER WIRE (Page 4)

•Candy No. 1 HEAVY COPPER SOLIDS AND TUBING (Page 4)

•Berry/Candy Candy/Berry (Page 4) •Cliff No. 2 COPPER SOLIDS AND

TUBING (Page 4)

•Birch/Cliff (Page 4)

•Elmo MIXED ELECTRIC MOTORS (Page 14)

•Small Elmo ELECTRIC MOTORS (Page 14)

•Shelmo SHREDDED ELECTRIC

MOTORS (also called "shredder pickings" or "meatballs") (Page 14)

•Sheema SHREDDED ELECTRIC MOTORS (also called "shredder pickings" or "meatballs") (Page 14)

•Zeyda SHREDDED INSULATED COPPER WIRE (Page 14)

Paper Specification Modification •(56) Sorted Residential Papers & News (SRPN 56) (Page 31)

Deleted Paper Specifications

•News Grades #6, #7, and #8

•Mix Grades #1, #2, and #3

ISRI's scrap specifications are internationally recognized guidelines used by buyers and sellers of recycled materials and products including nonferrous and ferrous scrap, glass cullet, paper stock, plastic, electronics, and tire scrap. The specifications are intended to assist in the trading of scrap commodities and are regularly reviewed and updated to reflect the expanding range of commercially recyclable materials.

May steel shipments up 3.1 percent

The American Iron and Steel Insti- 37,722,240 net tons, a 3.3 percent tute (AISI) reported that for the month of May 2017, U.S. steel mills shipped 7,660,969 net tons, a 3.1 percent increase from the 7,428,080 net tons shipped in the previous month, April 2017, and nearly unchanged from the 7,661,979 net tons shipped in May 2016. Shipments year-to-date in 2017 are

increase vs. 2016 shipments of 36,509,450 net tons for 5 months.

A comparison of May shipments to the previous month of April shows the following changes: hot rolled sheets, up four percent, cold rolled sheets, up three percent and hot dipped galvanized sheets and strip, no change.

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AUTOMOTIVE

Acura MDX facility begins

Production of the Acura MDX luxury SUV was bolstered when the East Liberty Auto Plant (ELP) in Ohio began producing the award winning Acura vehicle, the second U.S. plant to build America's best-selling luxury SUV of all time. ELP joins Honda Manufacturing of Alabama in Lincoln, Alabama in producing the MDX.

With the addition of MDX production at ELP, five of Acura's six products are now built in Ohio. The MDX joins its stable mate, the award-winning RDX sport-utility vehicle, at ELP, while associates at the Marysville Auto Plant build the TLX and ILX luxury sedans. The Acura NSX is also produced exclusively at the Performance Manufacturing Center in Marysville the only supercar built in America.

ELP invested \$85 million for the addition of new welding equipment, the extension of vehicle conveyors and other changes required to support production of the MDX, and will assume sole production of the MDX this fall. This will enable the Alabama plant to increase production of the Honda Pilot. helping both the Acura and Honda brands meet increased customer demand for their respective light truck models.

The refreshed and restyled 2017 Acura MDX introduced last year, raised its game with bold new exterior styling, larger wheel and tire options and an expanded complement of premium features and technologies, including the AcuraWatchTM suite of advanced safety and driver-assistive technologies, now offered as standard equipment on all 2017 MDX models, a first in the luxury SUV segment.

ELP also produces the best-selling SUV in America, the Honda CR-V, and served as the global lead plant in several key areas for the recent launch of the all-new 2017 CR-V.

The plant employs 2,350 associates and has the annual capacity to manufacture 240,000 passenger cars and light trucks.

Production at second U.S. reduces environmental impact

General Motors' (GM) sustainability approach enables the company to serve its customers and shareholders, increase operational efficiency, mitigate risk and improve the communities where it does business. GM summarizes its impact in its annual sustainability report at gmsustainability.com.

The report outlines company aspirations, from mobility for everyone to advancing zero emissions vehicles. Below are some near term results.

- 1. Innovating toward a lower-carbon future. GM produced 11 vehicle models around the world with some form of electrification, including the Chevrolet Bolt EV, which gets an EPA-estimated 238 miles on a charge. Lightweighting helped improve customers' fuel efficiency, with 10 vehicles losing a total of 3,600 pounds. The company's Maven car-sharing service, now in 17 cities, features 100 Bolt EVs capable of covering 250,000 all-electric miles a month.
- 2. Testing autonomous electric vehicles. GM drove more than 50 autonomous Bolt EV cars in San Francisco; Scottsdale, Arizona; and metro

Detroit. The company believes autonomous vehicles will help reduce traffic fatalities and make transportation available to elderly people and people with disabilities.

- 3. Making advanced safety technologies standard. The company offers 61 global models with forward collision alert, 58 with lane departure warning and 40 with side blind zone alert. More than half of the Chevrolet vehicles sold this year will feature GM's Teen Driver system, which encourages safe driving.
- 4. Building a clean energy economy. GM used 199.8 megawatts of renewable energy in 2016, surpassing its 125MW commitment four years early. The company saves \$5 million a year from these efforts. GM is working toward sourcing all electrical power for 350 facilities in 59 countries with renewable energy by 2050. Efficient manufacturing progress included reducing energy and carbon intensity by 16 percent and water intensity by 12 percent since 2010.
- 5. Driving toward zero waste. The company added 23 new landfill free

facilities last year. With 152 such sites worldwide, the company exceeded its 2020 landfill free target. GM champions the Materials Marketplace, a reuse network where businesses can use a software program to buy one another's scrap. The company reduced total waste by 27 percent since 2010.

- 6. Serving and improving communities. GM employees contributed 110,000 hours of volunteering with 148 nonprofits in 2016. Each of the company's 171 manufacturing plants engaged in an environmental outreach activity last year.
- 7. Transforming the auto industry through talent. GM filled a STEM position every 26 minutes last year. U.S. veterans made up more than 5 percent of new hires in 2016 and GM provides free training to all veterans through its Service Technical College. GM also committed to fair and equitable pay by signing the White House Equal Pay Pledge and offers internships to relaunch the technical careers of caretakers and parents who took a leave from the workplace.

by Volkswagen as a Best Supplier Nucor honored

Nucor Corporation was presented with the Volkswagen Group Award 2017, given to Volkswagen's best suppliers, at a ceremony held in Berlin at the end of June. The award recognizes Volkswagen's suppliers for their innovative strength, product quality, development competence, sustainability, and professional project management. Nucor chairman, chief executive officer and president John Ferriola accepted the award on behalf of Nucor's 24,000 teammates.

In addressing award recipients, Volkswagen chief executive officer Matthias Müller talked about the important role partnerships play in successfully navigating the transformations occurring in the automotive industry. "We must make further progress together and become better and better. Never before have not only the pressure, but also the opportunities been as great as they are today. If we are willing to change, we can successfully master the transformation in our only steel provider and one of only two industry," Müller said.

The Volkswagen Group recognized a total of 19 suppliers. Nucor was the

U.S.-based companies to receive the



— Testimonial -

I received your publication by mail. I can confirm I have never seen it before in its hard copy version. I like the layout and it is very informative, in a league of its own in terms of quality information. No wonder it is the only recycling publication quoted on Lumistar's blog. I look forward

to upcoming issues.

I have read issues of your publication in the past by accessing digital archives at one of two libraries I am a member of. Your website is also fantastic.

—Paul Angel, LUMISTAR CORPORATION

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ALTERNATIVE ENERGY

Veolia awarded operations contract for biomass facility

Plant to provide renewable for poultry producers; safeguards local waterways

Through a new \$9 million annual operations and maintenance contract with North Carolina Renewable Power - Lumberton, LLC, a subsidiary of Georgia Renewable Power (GRP), Veolia Energy Operating Services, LLC will manage a cogeneration plant that converts poultry litter (waste) and wood chips into biomass energy - diverting up to 285,000 tons of poultry waste a year, while providing a renewable recycling solution for the poultry industry.

Located in the heart of the "American Broiler Belt," North Carolina is home to a large-scale poultry production industry. Historically, poultry growers have applied chicken manure to their fields as fertilizer. However, with the increased number and size of chicken houses, and less land available for land application, poultry growers have found themselves with more litter than they require for fertilizer. Additionally, there is concern about use of poultry litter as fertilizer and its effects on local streams, lakes and ground water.

The North Carolina Utilities Commission recognizes poultry waste as a renewable energy source, creating a sustainable and economic opportunity for poultry waste-to-energy. GRP is converting a once dormant coal-fired power plant to a biomass facility that utilizes poultry waste and wood from the regional timber industry as fuel. The 25 megawatt Combined Heat and Power (CHP) plant will also leverage waste heat from its electricity generation process to dry and phytosanitize wood chips for export overseas, creating a new market for the local timber industry while supporting the use of renewable energy globally. Finally, the ash from the plant, which contains the original nutrients from the poultry litter, is sold for use as a feedstock for fertilizer and soil amendment.

Under a long term agreement, GRP has engaged Veolia to provide comprehensive operations and maintenance services of the plant's CHP operations and production of biomass fuel and organic fertilizer.

SCI evaluates replacement materials for solar products

SCI Engineered Materials, Inc. (SCI), a global supplier and manufacturer of advanced materials for physical vapor deposition thin film applications that works closely with end users and OEMs to develop innovative, customized solutions, has entered into a joint project with Case Western Reserve in their Summer Undergraduate Research in Energy and Sustainability program.

The goal of this project is to measure the band gaps and work function of several materials currently being developed by SCI through in-house R&D activities. Specifically, Case Western Reserve will evaluate test films to determine if SCI's materials have superior properties to replace cadmium sulfide and/or intrinsic zinc oxide in copper indium gallium selenide (CIGS) thin film solar products. Band gaps and work functions impact the

electrical conversion efficiency of CIGS solar cells. This project is expected to be completed during the third quarter of 2017. Successful evaluation of these materials is anticipated to enhance their market

Jing Yang PhD., SCI's senior product development engineer, stated, "Based on our current research and the outcome of data to be confirmed by Case Western Reserve, SCI may be able to offer replacement materials with competitive advantages of a wider band gap than cadmium sulfide to CIGS thin film solar cell manufacturers. In addition to superior electrical conversion efficiencies, solar cell manufacturers will be able to label their product cadmium free which is especially important during the manufacture of solar cells and recycling this toxic material."

Closed landfill home to solar farm

Waste Management, in partnership ident, Waste Management. "Waste Manwith project owner Captona Partners, recently completed construction on a five megawatt (MW) solar farm at the closed Hudson/Stow landfill.

Closed since 1997, the landfill now contains 18,216 solar panels on over 28 acres of land. The 5 megawatt capacity generates enough energy to power 1,000 homes in the region.

"Solar farms require a lot of area, and closed landfills make excellent sites for them," said Chris DeSantis, area vice presagement has developed similar projects at other closed facilities across the country."

Two additional sites - MT Sullivan Landfill with 2 MW and Berkley Landfill with 3.6 MW were also developed by Captona Partners while the fourth site - Hunt Road LF with 4.5MW was developed by Citizens Energy Corporation.

Collectively, the four solar farms generate enough energy to power approximately 3,000 Massachusetts homes.

■For more ALTERNATIVE ENERGY news, see Page B1

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PLASTICS

SC Johnson finds way to recycle Ziploc brand bags

In its quest to make Ziploc® brand bags recyclable from curbside bins, and avoid millions of pounds of plastic from ending up in landfills, SC Johnson has reached a milestone in that effort - successfully converting flexible film that includes grocery store and Ziploc brand bags collected from curbside bins into fullsize garbage bags.

Developing a way to reuse Ziploc bags is a key step in the process to make recycling available at the curb, along with other types of plastic film. While 18,000 plus commercial stores currently accept Ziploc bags for recycling, those efforts only amount to about 0.2 percent of Ziploc bags sold being recycled. Finding a way to allow Ziploc bags to be collected curbside and then recycled will make the practice more convenient and boost recycling numbers, as only about one-third of U.S. residents currently recycle.

"For decades we have worked to lighten our environmental footprint," said Fisk Johnson, chairman and chief executive officer of SC Johnson. "It's who we are. It's how we operate. And, recycling Ziploc bags is just one more example."

The search took the company to Europe. Unlike the U.S., Europe has the equipment needed to wash soiled plastic film to prepare it for reuse and recycling. After converting the rinsed plastic film into pellets, another European company melted down the pellets and converted them into garbage bags. SC Johnson is currently testing the same process in the U.S. with a recycling facility and garbage bag manufacturer. It is also looking into other uses for the material – such as pallets and construction beams. SC Johnson has no plans to mass produce or sell garbage bags made from recycled Ziploc bags, although it will sell limited quantities on its Green Choices website by the end of the year.

For years Ziploc bags have been collected and recycled at commercial stores, along with other plastic bags. But those bags are clean. Ziploc bags and other plastic film tossed in the recycling bin pick up dirt and other grime, reducing its value for reuse. Most recycling facilities in the U.S. "hand-pick" the Ziploc bags out of the recycling stream and send them to the landfill.

Dow launches grant program to increase plastics recycling

The Dow Chemical Company has teamed up with Keep America Beautiful to award two \$50,000 grants for organizations to establish Hefty® EnergyBag™ programs in their communities. The program is an approach to diverting traditionally non-recycled plastics, like chip bags and juice pouches, from landfills and converting them into valuable energy sources.

The grant application is open to municipalities, non-profits, materials recovery facilities and other qualifying organizations through September 1, 2017. Dow will provide grant recipients with the blueprint to develop a successful Hefty EnergyBag program and will facilitate planning and implementation. Recipients will ultimately manage the programs and solicit involvement of key community stakeholders.

"At Keep America Beautiful, we look for innovative ways to promote and improve recycling and other approaches to divert waste from landfills," said Brenda Pulley, senior vice president of recycling for Keep America Beautiful. "The Hefty EnergyBag program provides a convenient way to collect plastic materials that would otherwise end up in the landfill and offers a platform to promote positive behaviors to prevent this material from being wasted."

The grant program builds on Dow's long-standing relationship with Keep America Beautiful and will be funded through the company's Global Citizenship Impact Fund, a unique way to unlock business value while driving social impact. The fund provides financial resources for business-aligned global citizenship initiatives focused on three key impact areas: access to clean drinking water, packaging to prevent food waste, and post-consumer waste management.

The first full scale Hefty EnergyBag program was launched in Omaha and has since expanded from 6,000 to 8,500 households. As of June 2017, the Omaha program has collected more than 13,000 bags of previously non-recycled plastics, diverting more than 6 tons of waste previously destined for landfills.

California plastic manufacturers required to protect river

Agency (EPA) has reached an agreement with two Southern California plastic product manufacturers to resolve federal Clean Water Act violations. Both companies have corrected the deficiencies and have returned to compliance.

In December 2015, EPA inspections at the two facilities found violations that likely resulted in plastic pellets, known as "nurdles," entering storm drains that discharge to the Tujunga Wash, which flows into the Los Angeles River. Nurdles are plastic beads about one fifth of an inch in diameter. They are widely used in manufacturing and contribute to plastic debris in the nation's inland and coastal waters.

'The Los Angeles River provides vital habitat to birds, fish and other organisms that depend on the river for survival," said Alexis Strauss, EPA's acting regional administrator for the Pacific Southwest. "It is essential that manufacturers take proper steps to prevent nurdles from polluting surrounding waterways and harming local wildlife."

EPA inspected the facilities in support of the state's environmental justice enforcement initiative in the Pacoima/Sun Valley neighborhoods in the city of Los Angeles.

Western States Packaging, located in Pacoima, California, uses nurdles as raw material to manufacture food grade plastic bags. EPA's inspectors found that the facility was not operating with the proper

The U.S. Environmental Protection stormwater permit. Additionally, EPA observed spilled plastic pellets on paved surfaces throughout the facility without proper control measures in place.

Under this agreement, Western States Packaging, Inc. will pay a \$25,000 penalty and Direct Pack, Inc. will pay a \$42,900 penalty.

Direct Pack, located in Sun Valley, Calif., uses nurdles to manufacture plastic packaging products. EPA inspectors discovered the facility was discharging industrial wastewater without the proper permit. The inspection also found that the facility did not use proper capture devices, such as pans or tarps in loading areas, and did not have necessary containment systems to trap plastic material and prevent releases to local waterways. Additional deficiencies included improper storage of chemicals and industrial wastes. Finally, the company failed to promptly repair or maintain equipment and did not accurately report monthly inspections.

Under the Clean Water Act, plastic manufacturers are required to obtain a stormwater permit from the state to discharge industrial stormwater to surface waters. The permit requires the installation of controls and use of best management practices to prevent or minimize the discharges of pollutants in runoff from their operations. Such discharges may contain pollutants such as plastic resin pellets, flakes or powders.

GXT Green celebrates milestone

GXT Green Inc. celebrated a major milestone: Roche Bros. supermarkets has handed a shopper the five millionth Roche Bros branded GXT Green ECOgrade shopping bag.

A non-plastic alternative, ECOgrade bags are made from a patented combination of organic material and minerals and are photodegradable. This means that if the bag is littered, it will begin to degrade in 20 days and fully degrade within 240 days of exposure to sunlight, as documented by compliance with international testing leader ASTM's D-5272 standard. ECOgrade bags are priced competitively with standard plastic and can also be recycled.

Roche Bros., which operates 20 stores in Boston and Eastern Massachusetts, began using the ECOgrade bag in 2016 as an alternative to traditional plastic bags. Roche Bros. has steadily increased use of ECOgrade bags to offer more customers a sustainable and environmentally responsible way to carry home their groceries.

"We have been pleased with the performance, price and value of the GXT Green ECOgrade bags," said Roche Bros. Supermarkets director of facilities and maintenance Richard Ordway. "They've proven to be a key element of our commitment to environmental responsibility and sustainability, and when customers even notice a difference, we hear consistently how much they like the ECOgrade bags."

GXT Green also makes other ECOgrade bags that are compostable or degradable in a landfill.

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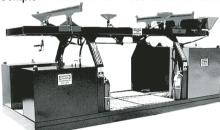
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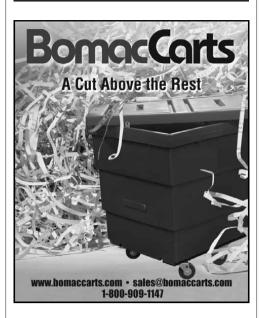
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Air-Weigh is taking their on-board bin scale to the cloud with their updated BinMaxx XL. This front-end loader arm scale uses cloud based storage for recorded lift data

Customers who don't use an on-board computer can use the BinMaxx XL system to transmit daily lift reports for each vehicle. While in route, BinMaxx XL captures each bin lift location, time and weight. The information is saved and once the vehicle returns to the office, the data automatically transmits through Bluetooth. The information is collected, uploaded and stored in the cloud with no effort on the driver's part.



ALLU Group Inc. 700 Huyler Street Teterboro, NJ 07608 800-939-2558 www.allu.net

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The TS drums come in two blade types: standard blades for screening and axe blades when crushing or shredding effect is required.



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Other features include a floating impeller stack to easily pass debris and prevent damage and an integrated spider bearing for tighter pump shaft security. The Patriot is available with a 5 year warranty for current Flint & Walling Partners.



Modroto 1745 Cragmont Street Madison, IN 47250 800-829-4535 www.modroto.com

MODROTO OFFERS LINE OF TILT TRUCKS IN HDPE AS STANDARD

Modroto now offers its line of tilt trucks in 100 percent virgin, high-density polyethylene (HDPE) plastic as standard at no extra charge. An upgrade versus tilt trucks molded from structural foam, blowmolded polypropylene and other plastic materials, the latest Poly-Trux® tilt trucks in HDPE are rotationally molded in a single leak-proof piece with sturdy, round corners and consistent wall thicknesses for structural strength and rigidity comparable to metal tilt trucks yet with flexibility to bounce back from sharp blows and heavy loads.

The tilt trucks are available in 5/8 cu.yd., 1 cu.yd. and 1.5 cu.yd. capacities and for payloads up to 2,200 lbs.



Muncie Power Products 201 East Jackson Street Muncie, IN 47305 800-367-7867 www.munciepower.com

MUNCIE POWER'S L125 POST-COMPENSATEDLOAD-SENSE VALVE

Muncie Power Products has expanded its valve line with a new post-compensated, sectional, load-sense valve – the L125.

A 33 GPM nominal flow rate valve, the L125's inlet is capable of a maximum of 40 GPM and its work sections a maximum of 26.4 GPM. The L125 features good flow sharing parameters and multiple spool flow options. Electro-hydraulic and manual shift versions are available. The new valve is suitable for the utility, agriculture, snow and ice and refuse markets in addition to specific applications such as truck-mounted cranes, forestry cranes and plow and spreader functions.

BUSINESS BRIEFS

Bunting Magnetics acquires Global Magnetics

■ Bunting® Magnetics Co., a leader in magnet and magnetic equipment design, manufacturing and distribution, has signed an agreement to acquire Global Magnetics, Inc. The Florida based company sells and distributes magnetic systems and mineral separation equipment designed and built by Master Magnets Ltd. throughout the U.S., Canada, Central America and South America.

In January 2017, Bunting Magnetics Co. acquired Master Magnets Ltd, a trusted brand of industrial magnetic separation equipment including eddy current separators, permanent and electro magnets, including overband magnets, drum magnets, magnetic head pulleys and suspension magnets sold through a worldwide network of distributors, including Global Magnetics, Inc.

The company's growth in these markets will be led by new sales team member Rich Evangelista, business development manager, aggregate, mining & minerals. In his new role, Evangelista is responsible for growing the Master Magnets Ltd. line of equipment in these markets throughout the Americas.

Evangelista has more than 21 years of material handling and magnetic separation equipment sales experience. Most recently, he worked in sales and customer service at Wiese USA, a Wichita, Kansas-based material handling equipment provider. He will based at the company's global headquarters in Newton, Kansas.

Terms of the acquisition of Global Magnetics, Inc. were not disclosed.

Travis Body & Trailer names 2016 top dealers

■ Travis Body & Trailer, Houston, has honored C.M.C. Trailer Distributors, Inc., Fort Worth, Texas, as its #1 Dealer for 2016. The company also named its top dealers, best new dealer and the most improved dealer for the past year.

Travis, an operating company of Truck Bodies & Equipment International Inc., is a manufacturer of aluminum end dump, bottom dump, transfer and specialty dump trailers and bodies.

To be named a Travis Top Dealer, companies need to meet an annual sales target, carry reasonable inventory, market and advertise Travis products, and provide exemplary Travis customer services in the areas of warranties, parts and service support.

Rounding out the top dealers for 2016 were Alamo City Trailer Sales; Gulf City Body & Trailer Works, Inc.; Old River Truck Sales, Inc.; Performance Truck & Trailer; Southwest Trailers & Equipment LLC; Trux Trailer & Tractor Repair, Inc.; Utility Trailer Interstate; and Wichita Trailer, Inc.

Travis also recognized Alamo City Trailer Sales as its Best New Dealer of 2016, and named Southern States Utility Trailer Sales, Jackson, Mississippi, the 2016 Most Improved Dealer.

Sonya Malvick elected as AWMI Member of the Year

■ The Association of Women in the Metal Industries (AWMI) announced Sonya Malvick as 2016 Member of the Year.

Malvick has been a member of AWMI for 22 years. In that time, she has held the position of Wisconsin Chapter membership chair, programs chair, vice president and chapter president. She currently serves as the international vice-president after serving as the international programs chair for six years.

Malvick is employed by Olympic Steel as a Wisconsin outside sales territory manager.

Sonya Malvick will receive her award at AWMI's Annual Conference at the InterContinental Chicago Magnificent Mile Hotel in Chicago, Illinois.

Creative Waste Solutions merges three companies

■ Creative Waste Solutions, Inc., a diversified holding corporation, providing waste services to residential, commercial, industrial, and municipal customers announced within the past 12 months, the company has successfully integrated and merged three companies and is operationally profitable.

Divided into 3 operating entities:

•Creative Waste Solutions operates as hauling brokerage division focusing on commercial recycling and disposal

•Integrated Waste Transportation Services (IWTS), services Commercial Hauling Divisions to one of the largest NYSE listed Waste Management Companies

•Creative Waste Solution South is a transfer station located in Hollywood Florida handling construction disposal, green waste and organic and recyclable materials

Cox names Byrnes as 2017 Cox Conserves Hero

■ Cox and The Trust for Public Land named Bob Byrnes as California's 2017 Cox Conserves Hero. California Native Plant Society, Byrnes' nonprofit beneficiary, will receive \$10,000. Byrnes was among the three finalists who were nominated by the public then chosen by local judging panels and went to compete in an online public vote for the title of California's Cox Conserves Hero.

Byrnes leads the restoration efforts for the San Diego Chapter of the California Native Plant Society. Not only does he invest his personal time to the organization's efforts, he also sets aside time to encourage and train other volunteers on best practices. Byrnes and his team of dedicated volunteers spend countless hours removing invasive plants that could potentially harm wildlife.

The Cox Conserves Heroes has donated nearly \$800,000 to environmental nonprofits, and nearly 200 volunteers have been honored.

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BUSINESS BRIEFS

Terramac names Road Machinery as dealer

Terramac, a manufacturer of innovative rubber track crawler carriers, expands its representation in the North American market to include Road Machinery as part of its dealer network. Road Machinery will represent the versatile Terramac product line in Arizona and California.

Road Machinery will offer Terramac's RT9, RT14 and RT14R crawler carriers to serve a wide range of industries including general construction, mining, environmental and forestry. In addition to Terramac's three standard options – convertible dump-to-flat beds, rock dump beds and flatbeds - Road Machinery will offer Terramac units customized with support attachments such as hydroseeders, spray booms, digger derricks, cranes and even cement mixers. With the addition of the versatile Terramac product line Road Machinery plans to expand into other markets, including major pipeline transmission.

The team at Road Machinery will provide professional sales, rental and aftermarket support on the Terramac product line across 13 branch locations. Road Machinery's knowledgeable staff has been fully trained in the application, sales, parts and service of Terramac crawler carriers and stands ready to offer prompt and professional customer support.

Rubicon hires former SAP Ariba executive as CFO

Rubicon Global has hired Chad Gold as its chief financial officer (CFO). Gold joins Rubicon from cloud software company SAP Ariba, where he most recently served as global vice president of finance and CFO following SAP's \$4.3 billion acquisition of Ariba in 2012. He brings substantial international business and technology experience to Rubicon, the worldwide leader in sustainable, cloud based waste and recycling solutions company.

Gold is an experienced finance executive with a proven track record of growth in the cloud and software industry. At SAP Ariba, Gold held multiple roles of increasing responsibility. Most recently, he served as CFO and led its global finance organization, consisting of 32 professionals based on five continents. A major component of Ariba's business is drawn from SaaS, or software as a service, and Gold oversaw growth that resulted in cloud subscription revenue more than doubling since SAP's acquisition in 2012.

Gold's previous experience includes finance roles at The Home Depot and Ernst & Young.

Rubicon is based in Atlanta and has offices in Lexington, Kentucky, New York and San Francisco.

What has four letters, sometimes nine letters, but never has five letters.

Don Slager named to 2017 highest rated CEO list

Republic Services president and chief executive officer, Don Slager, was recognized with the Glassdoor Employees' Choice Award and named to the 2017 Highest Rated chief executive officers list, according to a recent employee survey conducted by Glassdoor.com.

Based on the anonymous and voluntary reviews shared by Republic Services employees, Slager received an overall approval rating of 94 percent. In addition, 82 percent of Republic employees would recommend working for the chief executive officer. The list recognizes top leaders admired by their employees, with Slager earning a top spot on this year's list.

When employees submit reviews about their company on Glassdoor, they are asked to rate various factors about their employment experience, including their overall satisfaction and their approval of senior leadership. As part of this survey, employees are asked to rate whether they approve, disapprove or are neutral about the job their chief executive officer is doing.

Timken India agrees to acquire ABC Bearings

The Timken Company announced that its majority owned subsidiary, Timken India Ltd., has entered into a definitive agreement to acquire ABC Bearings Ltd., a manufacturer of tapered, cylindrical and spherical roller bearings and slewing rings in India.

The transaction is structured as a merger of ABC Bearings Ltd. into Timken India Ltd., whereby shareholders of ABC Bearings will receive shares of Timken India as consideration. The transaction is subject to receipt of various approvals in India, which are expected to take at least six months to complete.

ABC Bearings is a public limited company listed on the BSE Limited, with its registered office in Mumbai, India. The company operates primarily out of manufacturing facilities in Bharuch, Gujarat, and Dehradun, Uttarakhand. ABC Bearings serves an established original equipment customer base in India, focusing on heavy truck and offhighway industries. In 2016, sales were approximately \$29 million.

Graham Waste acquires Thompson Waste Removal

Graham Waste Services, a family owned and operated trash and recycling services provider, located in Brockton, Massachusetts, has acquired Thomspon Waste Removal, a residential trash and recycling business, located in Hanson, Massachusetts.

The acquisition includes Thompson Waste Removal's residential and commercial pickup customers as well as equipment.

Terms of the transaction were not disclosed.

WCA Waste acquires three solid waste companies

WCA Waste Corporation (WCA) has acquired three solid waste collection companies in the first five months of 2017.

In February, WCA acquired the assets of Midwest Companies, Inc., an MSW transfer station and collection operation located in Marshall, Missouri. In March, WCA acquired EnviroStar Waste Service, Inc., a residential, commercial, and roll-off collection company located in the suburbs of eastern Kansas City, Missouri. In May, WCA acquired the commercial collection accounts of Community Waste Services in Gainesville, Florida.

Acquisitions have been and will continue to be an integral part of the growth strategy of WCA.

Advanced Disposal makes changes to its board

Advanced Disposal, an integrated environmental services company, shared that E. Renae Conley will be joining the board of directors and will be serving on the company's compensation committee and nominating and corporate governance committee.

Conley has over 30 years of business experience in leadership positions across a number of cross-functional disciplines including finance, operations and human resources. Since 2014, she has served as the chief executive officer of ER Solutions, LLC, an energy consulting company.

In addition to her current responsibilities, Conley serves on the Ball State University Board of Trustees and the Ball State University Foundation, which is also where she received her Bachelor of Science degree in accounting and Master of Business Administration.

Conley's appointment became effective August 1, 2017 and she meets the independence qualifications outlined by the New York Stock Exchange.

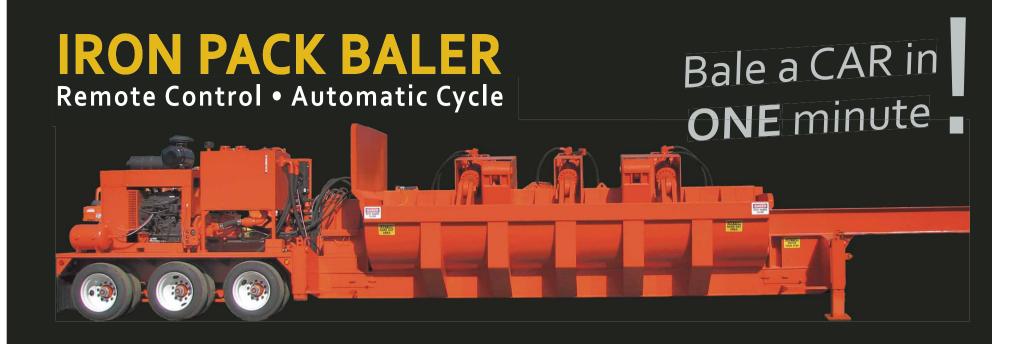
In addition to Conley's appointment, the company announced that in connection with the recent secondary offering of common shares of the company by affiliates of BTG Pactual and Highstar Capital, Sergio Pedreiro and Matthew Rinklin have tendered their resignations from the board of directors. These changes are consistent with the company's continued evolution towards having a board of directors comprised of a majority of independent board members and are in accordance with the terms of the Stockholders Agreement entered into with the company at the time of its initial public offering. Rinklin's resignation has been accepted by the board.

A pirate walked into a bar with a paper towel on his head. The bartender asked, "What's up with the paper towel?"

The pirate replied, "Yaaaarg! There be a bounty on me head!"



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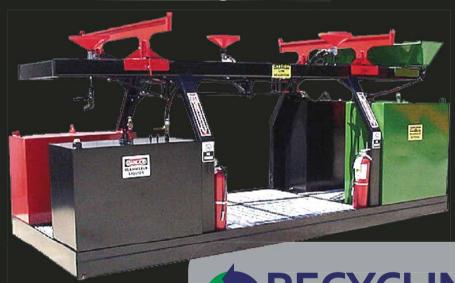
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EPA rollbacks and what they mean

by MAURA KELLER

mkeller@americanrecycler.com

Renewable energy technologies offer a tantalizing promise: clean, abundant energy gathered from continuously self-renewing resources. Conventional energy sources based on oil, coal and natural gas have proven to be highly effective drivers of economic progress, but at the same time, they are reported as damaging to the environment and human health. During the burning of fossil fuels, emissions are released into the atmosphere, contributing to global warming and acid rain. There also are major worries about the safety of nuclear technology and how to dispose of radioactive waste.

Recently, President Donald Trump signed an executive order aimed at rolling back several climate policies put in place during the Obama administration. These pullbacks will affect more than a half-dozen measures in an effort to boost domestic energy production in the form of fossil fuels. In addition, Trump will initiate a review of the Clean Power Plan, which restricts greenhouse gas emissions at coal-fired power plants.

As Floyd Self, partner at Berger Singerman explained, the Administration has proposed a broad range of policy changes addressing virtually the entire spectrum of environmental initiatives pursued by the Obama Admin-

"Depending upon the posture of the regulations or policy, the Administration has issued executive orders, has withdrawn from the Paris climate accord, has sought to withdraw or delay the implementation of adopted rules or seek the remand of cases back from the court, and has proposed massive cuts to the budget of the EPA.

"The biggest immediate change may be the budget cuts to the EPA, and related cuts to other agencies with environmental/energy programs, but the consensus appears to be that while there may be some cuts, especially to



the EPA, they will not be of the magnitude proposed by the Administration," Singerman said.

So how will these modifications and pullbacks affect the alternative energy arena in terms of jobs and productivity?

"From what we have read, the Trump administration is proposing to cut the EPA's budget rather substantially – around 30 percent – by eliminating programs and grants," said Dennis Lacey, chief executive officer of RGS Energy. "We follow these developments like others that are concerned about our environment, but particularly for us, with an eye toward how it will impact solar systems, for our customers, vendors and our company. From what we have heard so far, we do not see these pull backs affecting solar."

Lacey doesn't feel that the proposed pull back would significantly slow growth in the alternative energy segments including solar sector employment.

"We feel confident that Americans will continue to choose renewable energies, like solar, to power their lives while preserving the environment for future generations," Lacey said.

According to the Department of Energy and the World Resources Institute, about 800,000 Americans were employed in low-carbon emission generating technologies including renewables. Specifically, the solar workforce reached 374,000 employed in 2016 while 160,000 Americans worked in coal the same year. In 2016, 1 out of every 50 new jobs added was in the solar industry.

And while Singerman and his team have not done any independent analysis of the market, the reports he has seen suggest that solar-related employment is a growth industry.

"Just looking at Florida and the number of utility-scale solar projects announced or under construction already, certainly supports the narrative that solar employment is growing," Singerman said. "As we have seen in Florida especially, the people want more solar, whether rooftop or utility scale. Even in a state like Florida that prohibits third party sales of electricity

to other consumers, the implementation of Florida's new constitutional amendment should see further solar deployments. If you look to states like Massachusetts and New York, that have state-incentive programs for customer owned solar generation, we do not see any reversal of those policies and only further growth in this sector."

And consistent with the national trends, they are hiring here at RGS Energy. "We've grown our headcount 41 percent and are still hiring," Lacey said.

Daniel Thompson, partner at Berger Singerman also said that generally, the immediate sense is that there may be little effect on the jobs within the alternative energy segments.

"In particular, with the President's emphasis on restoring coal jobs, the actions of especially the utility industry is that coal is dead as a long term fuel source," Thompson said. "The economics of natural gas - the available reserves, the impact of fracking in releasing the gas, the speed with which new natural gas power plants can be

See ROLLBACKS, Page B7



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Finavia's Helsinki Airport goes solar to reduce carbon dioxide emissions

Finavia, the operator of Helsinki Airport, has decided to speed up its ambitious climate program. The aim of the program is to reduce the carbon dioxide emissions caused by the operations of all of the company's 21 airports to zero by 2020. Through its airport network, Finavia is a key party to the commitment of European airport companies to have 100 carbon-neutral airports in Europe by 2030.

At Helsinki Airport, this goal will already be reached in 2017, when the largest airport solar power plant in the Nordic countries is opened at the airport, and when airport buses start using renewable fuels.

Renewable energy for airport terminals and buses

Now that the international climate policy has faced difficulties through the unexpected withdrawal of the U.S., it is even more important that companies lead the way in reducing emissions. Finavia is committed to working hard to prevent our airports from increasing their carbon dioxide emissions in 2020. In addition to minimizing emissions, this means that Finavia is committed to

Finavia, the operator of Helsinki reducing emissions in countries struggling with environmental problems, such as in India, through compensation mechanisms, said Kari Savolainen, chief executive officer of Finavia.

At airports, carbon dioxide emissions are mainly caused by the energy consumption of buildings, lighting systems and vehicles. Helsinki Airport plays a central part in reducing Finavia's emissions. Finavia is also determined to start reducing emissions at its other airports.

Finavia's climate program consists of a range of different actions. Its essential parts are the significant increase in the use of renewable forms of energy, the origin of power and heat, the improvement of energy efficiency in all activities and the compensation of emissions in the markets.

International agreement on controlling aircraft emissions

Questions about the environment have more and more impact on the choices consumers make, also in terms of air traffic. That is why it is important to know that air traffic is the first industrial field that has a global emissions control system. Last year, the International Civil Aviation Organization (ICAO) made a decision on a CORSIA mechanism which ensures that air traffic emissions do not increase after 2020, even though the number of passengers increases, Savolainen said, describing the emissions control system of the air traffic industry.

Construction of a solar power plant in progress at Helsinki Airport

Currently, Finavia is among the first European airports to invest in a solar power plant to be located at Helsinki Airport. The construction of the power plant is underway on the roof of Terminal 2, and it is expected to produce energy starting from late summer 2017.

The entire system, with a total output of more than 500 kWp, will be completed in 2019, and it will be the largest airport solar power plant in the Nordic countries.

This project required thorough planning, as there is not much previous experience in the use of solar power plants in global airport environments. The power plant needs to be built in great detail to prevent, for example, solar panels from causing reflections to aircraft. Solar power will produce nearly ten per cent of the power required in the new energy-efficient terminal areas at Helsinki Airport, Savolainen said.

In addition to Helsinki Airport, Finavia will increase the use of renewable energy at its other Finnish airports, for example, using bioenergy and geothermal heat.

Vehicles fuelled by renewable diesel

Finavia will significantly increase the use of renewable fuels in ground vehicles at Helsinki Airport during 2017

Buses travelling between the terminal and aircraft will be fuelled by a diesel product manufactured wholly from waste and residue. In addition, smaller airport vehicles are already mainly powered by electricity. Finavia's goal is to engage other companies operating at its airports to use renewable fuels.

Partnership formed over biogas enzymes

DuPont Industrial Biosciences and silage storage specialists Bock UK Ltd announced a strategic partnership where Bock will demonstrate DuPont's biogas enzyme technology at commercial scale in the U.K. market. The enzyme technology, Optimash® AD-100, has been shown to help biogas producers in the agricultural sector improve yields and process robustness, which ultimately can increase customers' revenue and profitability while simultaneously increasing offerings in renewable energy.

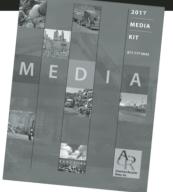
DuPont intends to provide its Optimash AD-100 enzyme biotechnology, an innovative and easy to use liquid enzyme product that has been shown to produce up to a 13 percent increase in biogas yields in anaerobic digesters, to Bock for distribution of the biogas enzymes to customers across the United Kingdom. The biotechnology works by accelerating the breakdown of various materials such as maize silage, grasses, straw, as well as manures and some food wastes, resulting in sugars more suitable for conversion into biogas. DuPont entered the growing biogas sector with the launch of Optimash AD-100 in July 2016.

The strategic partnership was announced ahead of the UK AD & Biogas and World Biogas Expo 2017, hosted by The Anaerobic Digestion & Bioresources Association. DuPont Senior Scientist Sandra Hinz spoke on a panel - entitled "Innovation in biomethane production: latest technologies and market opportunities" about how enzyme technology drives profits in biogas production. During Hinz's presentation, she discussed DuPont's dedication to the continued growth and improvement of the biogas industry and how partnerships, with industry manufacturers like Bock UK will enhance the biogas process.

Bock UK are leaders in silage storage supplying over 50 AD plants in the U.K. with patented sloping wall silage clamps and many more plants with silage clamp covers and accessories. Over 2 million tons of silage is stored in Bock UK silage clamps in the U.K.



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New Jersey Board of Public Utilities funds feasibility studies on proposed microgrids

New Jersey board of public utili- resiliency which supports the estabties president Richard S. Mroz, along with Bill Golubinski, manager of energy initiatives, division of property management and construction, Phillip S. Miller, executive director, Mercer County Improvement Authority, and Veolia North America officials, toured Veolia's existing Trenton Thermal Energy District Network, which would serve as the technology hub for a proposed Downtown Trenton microgrid. During the tour, Mroz announced the board's Town Center Distributed Energy Resource (DER) Microgrid program is funding feasibility studies for 13 separate proposed town center microgrids across the state.

The New Jersey board of public utilities is furthering the State Energy Master Plan's (EMP) priorities of improving energy resiliency and increasing the use of DER microgrid technologies by funding 13 Town Center DER Microgrid feasibility studies.

In the aftermath of Superstorm Sandy, the Christie Administration made it a priority to improve energy resiliency and the emergency preparedness and response of the utility companies. Therefore the EMP 2015 Update contained a new section on hardening and improving utility infrastructure lishment of Distributed Energy Resources (DER) such as microgrids to improve the grid's resiliency and reliability in the event of a major emergency. The update also directed the board to continue its work with the utility companies, local, state and federal governments, and other strategic partners to identify, design and implement Town Center DER microgrids to power critical facilities and services across the state.

The N.J. Department of the Treasury, Division of Property Management and Construction, along with Mercer County, the Mercer County Improvement Authority and the City of Trenton, filed an application for a feasibility study for the proposed Downtown Trenton Microgrid.

The Downtown Trenton Microgrid would connect and allow critical facilities within the microgrid to remain operational while the grid is down and also offer increased energy efficiency. The Trenton microgrid would connect the N.J. Justice Complex, the N.J. State House, N.J. Treasury Taxation Building, N.J. Department of Labor Building, N.J. Department of Health Building, N.J. Department of Community Affairs - Ashby Building, N.J.

Department of Human Services – Capital Plaza One Building, N.J. Department of Environmental Protection Building, N.J. Treasury - Mary Roebling Building, NJ Motor Vehicle Commission Building, NJ Network Building, Old Barracks, Thomas Edison College and the NJ War Memorial.

The Downtown Trenton Microgrid would help to secure financial, legal and industrial data and records in the Taxation, Justice and Labor Buildings. Along with enabling continued government services, the microgrid would power, heat and cool buildings that could serve as assembly areas or emergency shelters, such as the War Memorial, Old Barracks Museum and Thomas Edison College. The State House would also be served by the microgrid so that key emergency services continue to function.

The existing Veolia Trenton Thermal Energy District Network (TEDN) is proposed to be the hub of the project. The existing combined heat and power (CHP) district thermal facility provides 13,000 tons of chill water capacity and 132,352 pounds per hour of steam/hot water to approximately 35 customers in the central business district of Trenton. Additional generation capacity could be provided through

solar, dispatchable generation such as CHP and other new electric infrastructure to allow the proposed project to operate during normal and emergency conditions.

The board established a Town Center Distributed Energy Resource Microgrid Feasibility Study program with a budget of \$1 million. However, on June 30, 2017, after receiving and evaluating 13 applications for proposed microgrids and the potential benefits offered, the board approved a budget modification to fund all 13 applications at a total cost of \$2,052,480. The program was developed to provide incentives for local and state government agencies to study the feasibility of Town Center DER microgrids.

The board approved funding for applications submitted by: Atlantic City, Camden County, Cape May County MUA, Galloway Township, Highland Park, Hoboken, Hudson County, Middletown Township, Montclair Township, Neptune Township, Paterson, Woodbridge Township, and the State of New Jersey Department of Treasury with the partners Mercer County, Mercer County Improvement Authority and Trenton.

New State of Texas Electricity Sourcing Contract gives nod to renewables

The Texas Comptroller of Public Accounts Statewide Procurement Division has awarded its Electricity Sourcing Services contract to the Waco-based energy consulting firm Texas Energy Aggregation, LLC. The RFP awarded a four year contract for electricity purchasing and consulting services for the largest state agencies, and may also be used by any public entity in Texas, including municipalities, school districts and universities seeking electricity consulting services.

This updated contract presents several significant new opportunities for public energy purchasers to choose their fuel source, including renewable energy generated on or off-site. Rapid technological advancements, along with tax credits, have made wind and solar energy cost competitive, and even customers with meters in regulated areas now have the ability to participate in the program.

Power Purchase Agreements

For the first time ever, public customers, including state agencies, municipalities, universities and school districts who use the state energy contract have a clear method to compare and procure long term, wholesale renewable Power Purchase Agreements, or PPAs.

These PPAs provide greater value in aggregated purchasing power. Texas' abundant sun and wind resources have made off-site, utility-scale renewable energy highly cost competitive with traditional power sources, and can provide an effective hedge against inflation and price volatility. Texas Energy has partnered with the non-profit Rocky Mountain Institute, whose experienced team and members have been involved in approximately 94 percent of corporate renewable energy transactions over the last two years.

On-site solar is now addressed in this contract and is another method to reduce energy consumption and perhaps more importantly, provide significant relief from escalating delivery charges by reducing peak demand. Largely due to the credit stability of public customers, private investors are eager to finance the entire cost of construction and capture federal tax credits for which non-taxable entities could otherwise derive no benefit.

Regulated Areas

Even public entities in regulated parts of the state can now contract to lock in a portion of their electricity load for up to 25 years using on-and off-site sources of renewable power. By contracting a portion of their energy load on a PPA, entities located in municipally-owned and co-op areas can now increase budget certainty and reduce delivery charges.

Demand Response

Voluntary load curtailment, known as Demand Response, is also addressed in the new Electricity Sourcing Services contract as an option to capture an additional, unearmarked source of revenue. Customers with the ability to dispatch backup generation or curtail demand with up to 30 minutes notice can capture a new revenue stream by participating in this statewide program.

Urban Solar expands into Puerto Rico

Urban Solar named San Juan Lighting Corp as its representative in Puerto Rico and neighboring islands.

San Juan Lighting has focused on high end lighting and other architectural product sales for more than four decades. It will now provide a comprehensive package of off-grid solar LED lighting solutions from Urban Solar, for uses including pathways, bikeways, parking lots, street lighting, and perimeter security lighting.



EQUIPMENT SPOTLIGHT



Tire Recycling **Equipment**

by MARY M. COX

maryc@americanrecycler.com

Genan, which claims to be the world's largest tire recycling company, reports that an estimated 13.5 million tons of tires are scrapped annually. The global market offers recyclers a wide range of products that are available for use in the effort to continue the lifecycle of scrap rubber.

Columbus McKinnon (CM), a leading manufacturer of tire specific processing equipment for the tire recycling industry, recently developed a new line of hybrid shredders for the general and mixed waste and recycling industry. The new line consists of shredders from 10 - 250 hp(7.5 - 185)kW) with feed openings as small as 30" x 18" up to 90" x 46" (76 x 46 cm up to 229 x 117 cm) and are offered with traditional one piece shear knives or CM's new patented replaceable knife inserts.

Offering numerous improvements, the machines include advance knife locking systems, bearing protection and PLC controls. The crowning advancement is CM's new cutting technology. This proprietary knife system has been used in the company's tire shredding machines for the past 35 years. The high quality steel found in tires requires that knives be made from a high grade, hardened tool steel to effectively cut the steel wires cleanly. This same technology can be used for other high wear applications in the mixed waste and recycling industries. The knives, available in numerous sizes and configurations depending on the application, can be rotated and resharpened numerous times for multiple uses. This is a cost effective

option, compared to welding and the replacement of entire rotors.

Tom Schroeder. director of sales and marketing, explained, "This advancement in knife technology can reduce knife costs by over 300 percent and downtime associated with knife changes. By replacing knife inserts, it is not required to dismantle the machine to replace the knives. In

some cases, this could reduce knife change time by 50 percent. Also, in most cases CM can adapt existing shredders of all makes and models to their new knife system. This allows the processor to take advantage of this new technology without replacing their existing shredder. CM holds numerous patents based around cutting, screening and separation technologies for tires, one of the most difficult products to recycle. Customers can send material to CM for testing in one of many shredders. The process can be viewed in person or CM personnel will video record all tests for later client use."

ECO Green Equipment is a leading specialist in the design and manufacture of industrial grade tire recycling equipment and the firm offers a primary tire shredder, the ECO Green Giant. The machine, a two-shaft primary shredder exclusively engineered for processing whole scrap tires of all sizes, features a low RPM,

> high-torque technology. It efficiently shreds whole tires into rough rubber shreds (8 - 2" inches)for use or further downstream process-

> "The product is very popular with our clients as it's the first station in the tire recycling process. Processors can insert whole tires into the Green Giant and out-



Eco Green Equipment, LLC

fuel), TDA (tire derived aggregate), and other similar sizes for energy, engineering, and other secondary applications. If smaller sizes of rubber chips are desired, additional equipment and connecting conveyors are available as add-ons. Production rates for this primary tire shredder are estimated at up to 30 metric tons of tires per hour, depending on output size required," Brad Swenson, managing partner, stated.

Swenson reports that the patentpending triangular Green Giant blade configuration provides up to six times the life of a traditional shredder blade before sharpening is needed. Each knife has six edges, which can be sharpened up to 1x for a total of 12 edges per knife before replacement.

"Processing operators typically want to identify the cost to purchase, operate, and maintain reduction equipment. Depending on the desired size of material output, processors also want equipment versatility. Output size also dictates the amount of processing time, wear, and energy consumption. Recycling facility operators prefer equipment that is efficient, low maintenance, and with overall low operational costs. Accommodating customer needs can be a challenge but we see high demand globally, for scrap tire size reduction. Many industries seek smaller tire derived aggregate or chips for numerous uses. Industries such as construction, sport, and energy sectors use TDA as a replacement for natural resources previously used. Civil engineers and construction companies seek primary reduction output from tires for put tire shreds for infill and construction material."

See TIRE RECYCLING, Page B5

MANUFACTURER LIST

American Pulverizer **Chris Griesedieck** 314-781-6100 www.ampulverizer.com

BCA Industries John Neuens 414-353-1002 www.bca-industries.com

CM Shredders Tom Schroeder 941-755-2621 www.cmshredders.com

Eco Green Equipment, LLC Brad Swenson 801-505-6841 www.ecogreenequipment.com

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Tire recycling

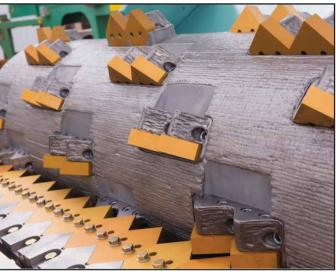
■Continued from Page B4

"Processing OTR tires, which are used in a variety of mining can vehicles, extremely difficult and costly to manage. Minorganizations sometimes bury scrap tires to dispose of them. Alternatively, we can recommend unique procedures and equipment to shred and recycle these large tires. New uses and products are being developed every day for rubber and tire recycling. The

more these markets are developed, TDA demand will increase," said Swenson.

Eco Green serves the global market and seeks to establish new markets with government, business and organizations that desire to improve their communities and environment. ECO Green Equipment has offered tire recycling equipment exclusively for the past 8 years and assists customers with a fullservice package of equipment, training, and support.

Eldan Recycling has recycling solutions for processing of all types of tires; whole car and truck tires including for mining, super singles, earth mover tires, OTR and more. The capacity of systems offered range from 1.5 - 8.0 ton/production per hour. "To achieve the required end product, various standard tire recycling plants are available. These standard plants are



also the starting point when systems are tailored to suit specific customer requirements. Our systems are 'multisize' meaning, the size of rubber granulate easily can be changed by merely altering the screen size combination. Using a modular approach, a large number of combinations can be supplied to produce shreds, chips, granulate and powder. During production of rubber granulate; flexibility is a very important factor since the market demand of various fraction sizes varies. Eldan's tire recycling solutions offer the highest production output quality and flexibility, as well as lowest operating and production costs. The tire recycling market is strong but at times, finding enough used tire scrap and identifying end user needs can be a challenge," Ken Moulin, sales manager, commented.

See TIRE RECYCLING, Page B6



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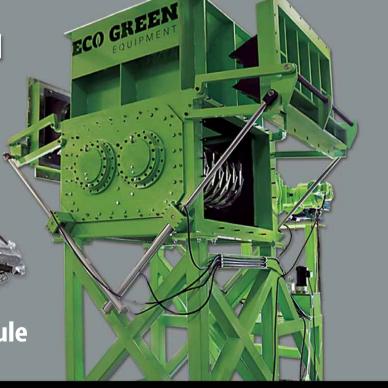
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INDUSTRY PROFILE

A Closer Look

by Donna Currie

■ Hallco Industries ■ Melissa Bennett • 800-542-5526

Melissa Bennett, the advertising and marketing coordinator for Hallco Industries, had a unique perspective on the company since she grew up in the same small town where the company was founded. "I grew up on a farm," she said, "and my grandparents lived down the road from where the company was founded, so I knew what Hallco was."



Bennett said that Olaf "Ole" Hallstrom was a farmer in

Tillamook, Oregon, who was looking for ways to do typical farm tasks with less effort. He invented the "live/moving floor system" that made unloading trucks much more efficient, and he founded Hallco Industries in 1976.

Bennett said that the live floors use a hydraulic system to convey materials out of trucks, making unloading and deliveries much easier. The systems can be used in trucks/trailers of any size and can be installed in bins and similar containers.

Since the materials can be unloaded without the lifting that's required for a dumping system, trucks can be unloaded when overhead height is restricted, and they can be unloaded without the need for fork lifts or even a dock. "Anywhere you can drive, you can unload," Bennett said.

While the live floor system was designed with agricultural needs in mind, the product line was expanded to include decking for heavier loads and for handling abrasive materials like solid waste and demolition debris. The live floors are now being sold for use in a number of industries, including recycling waste transfer, demolition, agriculture, biomass, and wood products.

Hallstrom eventually sold the company to Mike Almond, who is the current owner. Settled into a historical naval blimp facility and still employing the best local talent, Hallco continues to be headquartered in Tillamook, Oregon. "We're backed up next to a mountainside, in one of the most beautiful towns in the country," Bennett said.

Almond also began expanding the distribution of the Hallco Live Floors®, including outside the U.S., to Australia-Asia, Brazil, Canada and Europe. The company has also expanded its warehouse capabilities to improve delivery times and reduce costs, adding warehouse facilities in North Carolina, Texas, Ohio and Toronto. Most of the products are sold through dealers or OEMs.

New products have also been introduced, including a lighter weight system that boosts payloads so transportation is more cost efficient. There are currently ten different floor types with different aluminum slats, as well as a plastic deck that's useful in smaller trucks and bins in the recycling and shredding industries.

While Bennett isn't directly involved with the sales or manufacturing, she has learned a lot about it in the half dozen years she's been with the company. Still, her favorite part of her job is designing new product advertisements and marketing flyers and other materials for trade shows.

She said that trade shows are a big part of how the company showcases their products, attending everything from large shows like Waste Expo to small events like a the US Composting Council event.

About her time at the company she said, "We have grown exponentially." Not only have we added warehouse locations and expanded the areas we sell to, but the company has also greatly expanded its sales force to better serve their end users and dealers, including representatives overseas. "We're working to extend our market presence and provide the best possible service we can," she said.

Since purchasing Hallco, Mike Almond has spurred a lot of the company's growth by continuing to create innovative new products and expanding into new markets.

The day-to-day operations are conducted by a staff of professionals lead by Luke Almond. Luke's international experience is providing guidance in expanding overseas markets as well as the sales efforts in North America.

Another important staff member is Ron McMurphy, the company's COO. "He's been here almost since the beginning," Bennett said. McMurphy's talent is working with distributors and their customers to configure the floor systems.

While there are standard floor systems, Bennett said that a lot of what is sold is "super customized" for the end users. "The customer service here is something that's amazing."

Sometimes the customizations are small manipulations, but those adjustments make a big difference for customers, thanks to McMurphy. "He knows what will work," Bennett said.

"Proving that Hallco is big enough to deliver, but small enough to care."

Veolia will build and operate the first waste-to-energy facility in Mexico

Veolia, through its subsidiary Proactiva Medio Ambiente Mexico S.A. de C.V., has won the public call for tenders published by the government of Mexico City and just signed the contract to design, build, and operate the first waste-to-energy facility in Latin America

With a capacity twice that of the largest facility in France, this unit will treat around 1.6 million metric tons of household waste a year. The 30 year operation and maintenance contract of this facility will represent an estimated cumulative revenue of 886 million euros for Veolia.

Jointly with leading global and Mexican companies, Veolia will build and operate the first waste-to-energy plant in Latin America. Each day, the inhabitants of Mexico City generate 13,000 metric tons of waste. Untreated, this waste would cover the city's central square, Plancha Zocalo, to a depth of

one meter. At present, two-thirds of this waste is landfilled.

This new waste-to-energy facility will provide an efficient alternative for treating the waste from this city of 10 million people. Each day, it will convert about one-third of the city's household waste into green energy. The 965,000 MWh of electricity produced each year by the plant will be used directly by the Mexico City Subway Metro.

The plant's construction is due to begin in 2017 and will last three years. Operations are scheduled to start in 2020.

Active for 25 years in Mexico, Veolia serves 13 million people in the country and employs 3,000. Veolia treats 2.3 million metric tons of waste a year and provides 800,000 people with a waste collection service. With 500 million cubic meters of drinking water produced annually, Veolia Mexico meets the needs of the residents of 20 Mexican cities.

First PV inverter-integrated vehicle charger launched

At Intersolar North America, SolarEdge Technologies, Inc. is unveiling the world's first inverter-integrated electric vehicle (EV) charger. By supplementing grid power with PV power, SolarEdge's Level 2 EV charger offers charging up to six times faster than a standard Level 1 charger with its innovative solar boost mode.

SolarEdge's HD-Wave inverter, once integrated with an EV charger, will not only provide the existing management and monitoring of solar production, but will also enable EV charging from a single inverter and dashboard. The combined solution will offer considerable cost savings on both hardware and labor by eliminating the need for an additional conduit, wiring, and breaker installation. The solution

will also eliminate the need for an additional dedicated circuit breaker, which saves space and a potential main distribution panel upgrade.

Based on patent pending technology, the EV charger is embedded into SolarEdge's HD-Wave inverter and leverages its solar boost mode. This mode utilizes both grid and PV to charge at 9.6kW (40 Amp) Level 2 charging, which is up to six times faster than standard Level 1 charging. If PV is not available, the inverter-integrated EV charger will use grid power to charge at 7.6kW (32 Amp) Level 2 charging, which is up to five times faster than standard Level 1 charging.

The inverter-integrated EV charger is expected to be available in the last quarter of 2017.

Tire recycling -confi

■Continued from Page B5

Eldan products for size reduction include the following: The Super Chopper is a powerful, low speed single or dual shaft pre-chopper, capable of processing complete car and truck tires including super singles, down to shreds. The multi-purpose Rasper is an effective, medium-speed, dual drive machine. The product ensures individual size reduction down to approximate 12mm chips and liberation of up to 98 percent of steel content. The Fine Granulator #1 is a high speed, single shaft fine machine for the first granulation stage, enabling liberation of up to 50 percent of the textile contained in the

tires. The textile material can then be removed by the Classifier PC10.

The Fine Granulator #2 is a high speed, single shaft fine granulator for the second and final granulation stage. If needed, any remaining steel and textile can be liberated and the steel is removed by magnets. The Classifier PC15 removes 40 percent of textile material. The Aspirator ensures the final size distribution of granulate and removes any remaining liberated textile, providing a high quality rubber granulate, with purity of up to 99.9 percent.

An elderly woman recently died. She had never married. In her written instructions for her service she said that she was not to have any male pallbearers. She wrote: "They wouldn't take me out when I was alive. I don't want them to take me out when I'm dead."

SynTech opens Hawaii office

SynTech Bioenergy, a Denver- heat and power (CHP) technologies. based renewable energy technology company, has opened their first Hawaii office for sales and field service in Honolulu. The office will support local installations of SynTech Bioenergy's technology for delivering clean energy through advanced thermal conversion of biomass and other waste materials.

The office will be headed by Dr. Chris Guay, who has over 15 years of experience working in the renewable energy industry. Dr. Guay was born and raised in Hawaii and is a graduate of Punahou School.

Developing viable, cost-effective alternative energy technologies is especially critical for Hawaii, which is impacted by high energy prices and a strong dependence on imported fossil fuels. "Energy security is a big issue in Hawaii," said Guay. "SynTech's biomass energy systems will contribute to the growth of local renewable energy resources and achieving the State's goal of 100 percent clean energy by 2045."

"A growing global mandate exists for sustainable, decentralized production of continuous base load electricity and heat," said Wayne McFarland, chief executive officer of SynTech Bioenergy. "Our technology addresses this mandate while also offering opportunities for waste remediation."

SynTech's BioMax® systems are based on proprietary small-scale downdraft gasification and combined

The systems are housed in standard ISO shipping containers, giving them a compact footprint and making them easy to transport and install. The Bio-Max units are modular and scalable for electrical output from 165 kW up to 1 MW. They can be powered by a variety of abundant biomass and waste materials, such as wood wastes (chips and pellets, etc.), nut shells (walnut, coconut, pistachio, etc.), and fruit pits (olive, avocado, date, etc.). The only byproduct is a high grade organic biochar, which can be used as a soil amendment to aid plant growth. Bio-Max biochar also meets current standards for activated carbon for use in air and water filtration. SynTech's biomass energy systems are ideally suited to meeting Hawaii's energy needs. The systems are fully automated, can be operated and controlled remotely, and neither use nor produce water.

In July 2017, SynTech will complete the installation of its newest facility in Texas, consisting of four BioMax systems that utilize pecan shells as feedstock for generating electricity. Five similar systems - the first dating back to 2008 - are currently operating on walnut shells in California. Together, they have accumulated over 75,000 hours of operation. SynTech is currently preparing three additional BioMax units for a new California customer and is manufacturing its first unit for the Japanese

Rollbacks

■Continued from Page B1

permitted and built, and the new pipelines planned and coming on line to serve natural gas plants – mean that natural gas is going to be the fuel of choice for at least the next 10 years or more."

The fact that the Administration wants the U.S. to be an energy exporting nation means that only more natural gas needs to be produced in this country.

As Thompson explained, in addition, there has been substantial opposition to the pullbacks environmental advocacy groups and certain states, which has resulted in litigation designed to slow or stop this pullback, particularly in situations where the administration may not follow proper procedures for changing or freezing the current regulatory regime, or is restricted from making changes by the current status of substantive legislation that Congress may not have the willingness to change.

As mentioned, at this time the industry doesn't foresee an impact on solar from the proposed pull back. Having said that, this, coupled with the Trump administration's decision to not join the Paris Accord, speaks to a theme that is less government resources focused on the environment.

"We believe small business owners and individual homeowners, each of

whom are aware of these developments, can take action on their own, apart from the government, by installing solar systems on their homes and businesses," Lacey said.

What other issues may arise within the alternative energy markets as a result of these pullback initiatives, and why should business owner and industry players pay attention to this?

Quite simply, any change in regulations is always an opportunity for businesses that can be at the front of the changes.

"Whether the court or the EPA is successful in revoking the clean power plan, utilities and other businesses are going to continue to make investments in technologies that make good business sense, such as natural gas power plants," Self said.

Waste to energy and similar facilities that have invested substantial capital in advanced treatment technologies might find themselves at a competitive disadvantage in case of rollbacks, which could result in more litigation – this time from industry groups rather than environmental ones. In addition, certain states and/or local governments might try to enact more stringent laws and regulations to offset any federal rollbacks.

"It is hard at this point to determine how all of this will end up," Self said. "The main climate issue at the moment is a climate of uncertainty."

SC Johnson site running on 100 percent wind energy

greenhouse gas emissions, SC Johnson announced their manufacturing site in Bay City, Michigan, the facility that manufactures Ziploc brand bags, recently joined two other company owned manufacturing sites running on 100 percent wind energy for electricity.

"With our third site powered entirely by wind energy, almost one third of SC Johnson's energy usage globally now comes from renewable sources," said Kelly M. Semrau, senior vice president - global corporate affairs, communication and sustainability, SC Johnson.

Bay City achieved this milestone by purchasing 100 percent of its wind energy from nearby wind farms.

With community cooperation, SC Johnson made a tall commitment to wind energy usage in 2012 when it powered up two wind turbines at Waxdale, the company's largest global manufacturing facility located in Mount Pleasant, Wisconsin. The two turbines generate about 8 million kilowatt hour of electricity each year, enough to power 770 homes a year. They eliminate about 6,000 metric tons of carbon emissions annually.

Since 2009 and 2016 respectively, manufacturing operations in Mijdrecht,

In an ongoing effort to reduce Netherlands, and Gorzow, Poland, have been running completely on wind energy. The Gorzow manufacturing plant also purchases its entire demand for wind energy. The company's Mijdrecht site purchases approximately 50 percent and generates the remaining wind energy onsite.

SC Johnson has used renewable energy sources around the world since 2004. The efforts help exceed their goal of reducing greenhouse gas emissions and increasing the percentage of renewable energy used by their global manufacturing sites, the largest users of energy at SC Johnson. Through the end of 2016, SC Johnson had achieved a nearly 52 percent reduction of greenhouse gas emissions versus their 2000 baseline.

While wind energy is a source of SC Johnson's greenhouse gas emission reductions, other sources are critical contributors, too. For example, in Indonesia, the company uses waste biomass products as an energy source. This resulted in reducing greenhouse gas emissions by more than 13,000 metric tons in Indonesia alone. Globally, more than 32 percent of the company's energy use now comes from renewable sources.



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