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NewsVoice of Salvage, Waste and Recycling

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FOCUS: Electronics

Electronic recycling growth continues



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Used tire legislation heats up

by MAURA KELLER
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As the issues of scrap tire recycling takes center stage within the recycling industry, 10 states across the U.S. have tire recycling and scrap tires on their agenda for the 2018 legislative sessions. From Oklahoma and Utah, which will be addressing requirements for tire recycling initiatives, to New Hampshire and Virginia, which will be proposing new measures for prohibiting or setting moratoriums on tire crumb rubber infill for playgrounds, there are going to be a wealth of tire recycling topics discussed and voted on across the U.S. by the end of 2018.

According to Brad Rea, president of Champtires.com, legislation has been proposed and adopted in various states to safeguard drivers from potentially unsafe used tires.

“This has resulted in more tires entering tire recycling facilities and less, poorer quality tires being sold to consumers from sellers who do not inspect and test every tire before reselling,” Rea said.

California

Most recently, the California Department of Resources Recycling and Recovery (CalRecycle) has awarded \$410,364 in grants for civil engineering projects that will use recycled California waste tires in place of conventional construction materials.

These recycled waste tires will be used for everything from constructing roadways and trenches to repairing retaining wall and constructing trenches throughout four California counties. According to CalRecycle director Scott Smithline, “The use of, rather than landfill these tires or create stockpiles that can lead to fires and other public health threats, California is making use of a recycled material that has proven to perform well for these types of projects.”

As CalRecycle explained, tire-derived aggregate is a low-cost, lightweight, and fast-draining product highly suitable for use in numerous civil engineering applications as well as beneficial uses at landfills.

Georgia

For the past two decades, the State of Georgia has been charging a \$1 fee for each new tire sold in the state. Originally, the revenue from that fee was intended to be spent on the cleanup of abandoned tires in Georgia and the overall management of scrap tires. However, about 41 percent of the \$154 million collected from the tire fee has gone into the state’s general fund in the two decades that motorists have been paying the fee.

Hoping to reverse that trend Georgia lawmaker Rep. Jay Powell has intro-



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duced HR 158, which would ban the practice except in the case of a financial emergency. The bill would change the state constitution to make sure that proceeds from certain future fees and taxes are used for the purpose lawmakers intended.

In addition to this bill, there are two additional tire related bills in the Georgia House and Senate. These bills, if passed, will require new tire retailers that collect a fee for the collection or disposal of scrap tires upon the purchase of replacement tires for a motor vehicle to collect the fee whether or not scrap tires are relinquished to the retailer.

Hawaii

Relinquishing old tires will be regulated if the proposed Hawaiian legislation passes in 2018. The proposed bill will allow each county to create a requirement that customers must provide an equal number of used vehicle tires to the tire retailer from who they are purchasing tires. If they are unable to provide the used tires, consumers will be required to

pay a fee that can be refundable once the used tires are relinquished.

New Hampshire & Minnesota

With the proposed legislation of HB 1561, the state of New Hampshire will prohibit the use of recycled tire rubber throughout villages, towns, school and municipal playgrounds amid growing concerns the bouncy surface contains toxic chemicals. The City of Minneapolis in Minnesota also recently proposed eliminating the use of tire mulch on playgrounds and athletic fields throughout the city.

New Jersey

New Jersey’s bill requires the Department of Environmental Protection to establish a system for the manifesting, tracking, collection, recycling and disposal of scrap tires. The system will require all scrap tires to be collected and transported from their source for delivery to a licensed scrap tire facility or disposal facility. Under the bill, only persons who are licensed scrap tire haulers will be per-

See USED TIRES, Page 4

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U.S. Department of Labor fixes error

Following a review of the requirements put in place in 2016 regarding the “Improve Tracking of Workplace Injuries and Illnesses” regulation, the U.S. Department of Labor’s Occupational Safety and Health Administration (OSHA) has taken action to correct an error that was made with regard to implementing the final rule.

OSHA determined that Section 18(c)(7) of the Occupational Safety and Health Act, and relevant OSHA regulations pertaining to State Plans, require all affected employers to submit injury and illness data in the Injury Tracking Application (ITA) online portal, even if the employer is covered by a State Plan that has not completed adoption of their own state rule.

OSHA immediately notified State Plans and informed them that for Calendar Year 2017 all employers covered by State Plans will be expected to comply. An employer covered by a State Plan

that has not completed adoption of a state rule must provide Form 300A data for calendar year 2017. Employers are required to submit their data by July 1, 2018. There will be no retroactive requirement for employers covered by State Plans that have not adopted a state rule to submit data for calendar year 2016.

A notice has been posted on the ITA website and related OSHA webpages informing stakeholders of the corrective action.

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA’s role is to ensure these conditions for America’s working men and women by setting and enforcing standards, and providing training, education and assistance. For more information, visit www.osha.gov.

MDEQ awards grants to 11 localities for river cleanups

The Michigan Department of Environmental Quality (MDEQ) and Great Lakes Commission announced the availability of more than \$21,000 in grants to support local efforts to clean up rivers, streams and creeks across the state.

Michigan’s Volunteer River, Stream and Creek Cleanup Program provides grants to local units of government to clean Michigan waterways. Local governments partner with nonprofit organizations or other volunteer groups for the cleanups.

The groups selected to receive funding in 2018 include:

- Huron River Watershed Council, \$4,350
- Missaukee Conservation District, \$2,862
- St. Joseph County Conservation District, \$2,797.50

- Grand Traverse Conservation District, \$2,200
- Shiawassee County Health Department, \$1,900
- Allegan Conservation District, \$1,840
- Benzie Conservation District, \$1,126
- Kalkaska Conservation District, \$1,077.50
- Village of Estral Beach, \$1,039
- City of Monroe, \$1,025
- Antrim Conservation District, \$975

The cleanup grant program began in 1998 and is funded by the sale of the state’s water quality protection license plates. Grants are administered by the Great Lakes Commission, under contract with the MDEQ.

ISRI issues statement on China’s ban on additional recyclables

The Institute of Scrap Recycling Industries (ISRI) released the following statement in response to the Chinese Government’s disclosure that more recyclable materials will be prohibited for import over the course of the next two years:

“The Chinese Government’s announcement will have an impact on more than 676,000 metric tons, worth about \$278 million, in U.S. scrap commodity exports to China in the first year and another 85,000 metric tons worth more than \$117 million in the second year,” says ISRI president Robin Wiener. “Although we anticipated more import restrictions would be announced, we remain concerned about the effect these policies have on the global supply chain of environmentally-friendly, energy-saving

scrap commodities and will instead promote an increased use of virgin materials in China, offsetting the government’s intent to protect the environment.”

The new prohibited items include the following:

- By end-2018: steel slag, post-industrial plastics, compressed auto pieces, small electric motors and insulated wires, and vessels.
- By end-2019: wood pellets, stainless steel scrap, and nonferrous scrap excluding aluminum and copper.

The policy follows earlier announcements to prohibit 24 categories of recyclable materials beginning on January 1, 2018, and the imposition of tighter quality standards on all scrap imports beginning on March 1, 2018.

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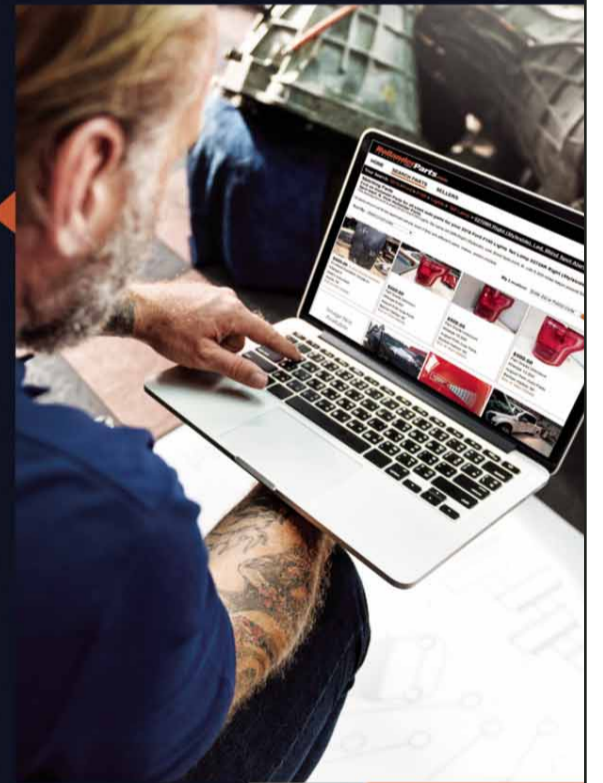
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HOLLANDER

RePower South to construct Berkeley County recycling facility

South Carolina plant poised to transform waste processing

South Carolina-based RePower South (RPS) will construct the Berkeley County Recycling and Recovery Facility, positioning Berkeley County, South Carolina, as a leader in the community and environmental sustainability. RPS offers a cost-effective recycling and waste processing solution that expands recycling recovery across the entire waste stream and produces a low carbon, renewable fuel. RPS will fund the over \$40 million capital investment in the facility and create over 60 green jobs.

“This innovative approach to recycling is bringing Berkeley County, and South Carolina, into the 21st century,”

said Berkeley County supervisor Bill Peagler. “This method encourages citizens to do what is environmentally friendly, without the hassle of sorting, proving it is possible to increase recycling efforts in communities.”

RPS president Robert Shepard said that the system will both increase Berkeley County’s recycling as well as produce a low carbon, clean fuel from waste below the cost of traditional recycling programs and landfilling. “Our platform enables greater recycling recovery and does so across the entire Berkeley County waste stream. We also create a low-carbon, clean fuel to help reduce the

consumption of coal,” said Shepard. “Greater recycling, less landfilling, and cleaner air at lower cost is a true win-win for Berkeley County.”

RPS development partners include Barnhill Contracting Company to construct the facility; Bulk Handling Systems to provide the waste processing system, and Loesche Energy Systems to provide the fuel manufacturing system. RPS licenses the fuel technology (ReEngineered Feedstock™) from Accordant Energy. The facility is slated to begin operations in early 2019.

Used tires

■Continued from Page 1

mitted to collect and transport the scrap tires.

The latest legislative bill for New Jersey is also proposing that each district or county recycling plan allow municipalities to source separate scrap tires from the solid waste stream as part of the municipal obligation under current law to recycle at least three items in addition to leaves.

New York

It is being proposed through legislation that the State of New York’s Department Of Environmental Conservation

provides a six month moratorium on the use of crumb rubber in synthetic turf in order for an environmental and public health study to be conducted.

Ohio

Ohio’s proposed bill, SB223, prohibits the installation of unsafe used tires on specified motor vehicles. The prohibition will fall under the Ohio Consumer Sales Practices Act and includes imposing a fine of no more than \$1,000 for a violation.

Oklahoma

Oklahoma is considering bill, SB1045, which proposes requiring compensation to used tire facilities and tire-derived fuel (TDF) facilities to be limited to facilities located in Oklahoma.

Compensation for used tire activities will be limited to used tires from Oklahoma. According to the bill, a used tire recycling facility or TDF facility may transport and deliver used tires collected from Oklahoma to an out-of-state used tire recycling facility or TDF facility but shall not be eligible for compensation from the Used Tire Recycling Indemnity Fund for those used tires.

Virginia

The use of used tires in synthetic turf is also top of mind in the State of Virginia where legislation is being proposed that will establish a three-year moratorium on installation of synthetic turf that contains recycled crumb rubber from waste tires at schools and recreational parks.

The bill also requires the Virginia Department of Health, in coordination with the Virginia Department of Conservation and Recreation and the Virginia Department of Education analyze the potential adverse health effects of synthetic turf that contains recycled crumb rubber from waste tires and report its findings to the General Assembly no later than July 1, 2019.



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Events Calendar

June 25th-28th

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August 20th-23rd

SWANA's WASTECON. Gaylord Opryland, Nashville, Tennessee.
888-744-1449 | www.swana.org

September 11th-13th

Missouri Recycling Association Conference. Stoney Creek Hotel and Conference Center, Independence, Missouri.
866-667-2777 | www.moraconference.org

October 24th-25th

Canadian Waste & Recycling Expo. Enercare Centre, Toronto, Ontario, Canada.
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Los Angeles awards “recycLA Star” to Loyola Marymount University

The Los Angeles City Board of Public Works awarded Loyola Marymount University (LMU) with the first-ever Platinum recycLA Star Award at an on-campus event. RecycLA is the new recycling and waste collection program for commercial and large apartment buildings throughout the city.


The recycLA Star Award recognizes business and apartment owners who embrace recycLA’s recycling, landfill diversion, and food rescue opportunities. RecycLA Stars are actively engaged in food recovery, changes in materials sourcing, composting and making other contributions to landfill diversion, beyond increasing recycling. Award recipients can receive the Green, Silver, Gold, or Platinum level award.

With a student body of just over 9,000, LMU has an impressive recycling rate of nearly 84 percent. The University recycles over 6,000 tons of materials annually, with on-site recycling and food waste programs that turn food and recyclable paper into nutrient-rich soil enhancements. From 2011 to 2017 alone, LMU reduced its food service disposal and diversion tonnage from 101 tons to 33.7 tons, an over 65 percent reduction in total food service waste in just six years. Through its Office of Sustainability, LMU also employs over 21 paid student employees and supports numerous internships, research and service credits for academic work.

LMU has been nationally recognized for its sustainable practices. In 2017, the university received the national Grand Champion Diversion award from Keep America Beautiful’s RecycleMania competition – the nation’s premier waste-reduction and recycling competition among colleges and universities. Other recognitions include being ranked one of the top 10 “Cool Schools” by the Sierra Club and receiving the Green Restaurant Association’s (GRA) 4 Star ranking for its two main dining facilities.


In July 2017, LA Sanitation launched an unprecedented expansion of its recycling services beyond single family residences through its program, called “recycLA.” With the rollout phase complete, LA Sanitation and recycLA Service Providers have transitioned more than 70,000 commercial and apartment building accounts to the new program.


In keeping with the City’s commitment to enhance the quality of life in Los Angeles, recycLA is now providing recycling opportunities to all Angelenos, generating jobs, reducing traffic congestion, and improving air quality citywide. recycLA will eliminate the city’s dependence on landfills and position Los Angeles as the first big city in the nation to achieve zero waste by 2025.




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King County forms task force in response to Chinese ban

King County forms task force to seek solutions to China recycling import restrictions

King County, Washington has formed a task force with representatives from cities, solid waste haulers, and others to improve recycling in light of new rules that have severely restricted what collected recyclables China will accept for processing.

In response to new rules China has put in place that restrict the amounts and types of collected recyclables that can be sent there for processing, King County has established a new task force with cities, garbage haulers and others to find ways of advancing recycling regionally.

The task force will identify common ground for advancing recycling in light of China's restrictions on acceptable recyclables, focusing on immediate, mid-term and longer term actions. China's recent policy is causing major disruption to recycling efforts not just in King County, but across the country.

The task force will have monthly meetings scheduled over the next few months. Progress reports of the task force work will be provided to the parent advisory committees.

"With representation from local government, recyclable hauling, processing and marketing companies, and others, the task force possesses a deep knowledge base that will help us develop lasting solutions to a challenging issue," said Pat D. McLaughlin, director of the King County Department of Natural Resource and Parks' Solid Waste Division. "I am confident that this group's work will result in improvements to the current recycling system."

The task force was created through the King County Solid Waste Advisory Committee and the Metropolitan Solid Waste Advisory Committee, which advise the King County Executive and County Council on solid waste issues and decisions affecting county residents and the services they receive.

In addition to King County Solid Waste Division representatives and a King County Solid Waste Advisory Committee member, current task force members include representatives from solid waste haulers that operate in King County – Recology, Republic Services, and Waste Management; representatives from the cities of Renton, Lake Forest Park, Shoreline, Bothell, Kent, Kirkland, Bellevue and Federal Way; and the Washington Utilities and Transportation Division, which regulates the rates, services, and practices of privately owned solid waste collection companies.

At the start of the year, the Chinese government implemented a policy featuring a stringent contamination stan-

dard of 0.5 percent for recyclable material imports. A typical permitted recycling facility achieves contamination rates of three to five percent.

Recycling contaminants are items that are not accepted for recycling in a particular recycling program or don't belong with the specific materials being recycled.

Food, liquids, oil, and hazardous chemicals that are put into recycling bins can contaminate paper and other materials making whole batches of materials collected in recycling trucks unusable. Contaminants can also be accepted items that are too dirty.

McLaughlin said residents play an essential role in improving the quality of collected recyclables.

"The most important step people can take is to follow proper recycling guidelines to keep the overall contamination rate of collected recyclables as low as possible," McLaughlin said. "Ensuring recyclables are clean, dry, and empty helps them retain their value."

American recycling companies, particularly on the Pacific coast, have relied on the Chinese market due to the lower labor costs to sort mixed paper and mixed plastics - things like squeezable plastic bottles, yogurt containers, food storage containers, detergent and ketchup bottles, that King County residents place in their curbside recycling bin and in bins at the County's recycling and transfer stations.

Earlier this year, leaders with the King County Solid Waste Division's LinkUp program and Seattle Public Utilities organized a meeting to address the domestic processing of mixed plastics, with more than 60 professionals from the recycling industry coming together to find solutions to the strict new limits.

The group discussed the possibility of building a local secondary sorting facility where materials that are not sorted at primary material recovery facilities would be brought for further separation into market-ready bales before going to end-user manufacturers.

Many recyclable materials, such as aluminum cans, cardboard, plastic water and soda bottles and milk jugs (#1 and #2 bottles) are all in demand by domestic processors as recyclable commodities and are not affected by the China National Sword policies.

Exploring domestic processing and markets for collected recyclables is a key component of King County's draft Comprehensive Solid Waste Management Plan.

Republic Services drivers honored with National Driver of the Year Awards

Republic Services, Inc. announced that collection drivers Toribio Gonzalez and Chuck Thorpe are the recipients of the National Waste & Recycling Association's (NWRA) prestigious Driver of the Year awards in the large industrial and large residential truck categories, respectively.

Each year, NWRA celebrates the industry's best drivers with the distinguished recognition based upon exemplary safety records and customer service. The drivers were honored in Las Vegas at the 2018 WasteExpo, North America's largest annual waste industry tradeshow.

"We unequivocally prioritize safety above all else," said Jon Vander Ark, chief operating officer. "It's the foundation of our business and the cornerstone upon which our initiatives and programs are built. It's why we have established a best-in-class driver training program that enables our drivers across the country to continually improve. It's also fundamental to our commitment to our customers and how we make a positive impact each day in the communities we serve. On behalf of Republic and our 35,000 employees, I congratulate Toribio, Chuck and their families on this extraordinary recognition."

2018 Driver of the Year: Toribio Gonzalez, Large Industrial Truck Category

As part of Republic's Huntington Beach, California division, Toribio Gonzalez has devoted more than three decades of service to the industry, starting out as a residential driver, promoted to a commercial driver and currently as an industrial truck driver. Over the past 30 years, Gonzalez has maintained a perfect safety record with zero incidents or injuries, and has never taken an unscheduled day off.

Gonzalez has received Republic's Dedicated to Excellence and Dedicated to Safety awards in 2015, 2016 and 2017. Averaging 310 miles and collecting 180 tons of waste each week, he is

considered a leader and role model for fellow drivers, and serves as a mentor for new drivers, inspiring team members to approach the day with a positive attitude and a willingness to always go above and beyond for customers.

2018 Driver of the Year: Charles Thorpe, Large Residential Truck Category

Chuck Thorpe is part of Republic's Northeast Area based in Telford, Pennsylvania. Averaging 3,200 residential stops or pickups a week, he has earned and maintained an impeccable safety record with over 20 years incident and injury free. Thorpe drives an average of 500 miles per week, collecting 60 tons of waste.

Thorpe has established a reputation as a leader and selfless team member. He takes great pride in the community he serves, but is also willing to go above and beyond for the company. Thorpe is part of Republic's SOS program, which consists of drivers from across the country who are deployed to service routes in the aftermath of natural disasters. He flew to Texas and Massachusetts last year to help local teams impacted by the storms.

For over 25 years, the NWRA Driver of the Year program has honored drivers who have upheld the field of recycling and waste collections as an honorable occupation, and have conducted themselves and the vehicles they operate in a safe and responsible manner. Republic drivers have won 75 percent of the Driver of the Year awards in the large truck category since 2009.

Republic's drivers begin their employment with week-long equipment training that focuses on skill set verification at one of 22 driver training safety centers nationwide. This initial training is followed by weeks of in-cab instruction and evaluation. Throughout their tenure, Republic drivers participate in monthly supervisor-led training focused on eliminating incidents.

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MDEQ updates waste management professionals on PFAS response

The Michigan Department of Environmental Quality (MDEQ) updated air and waste management professionals on the state-wide effort to identify per- and polyfluoroalkyl substance (PFAS) contamination in Michigan and actions the MDEQ is taking to prevent unacceptable exposures to Michigan residents. This MDEQ-led effort is part of Governor Snyder's Michigan PFAS Action Response Team (MPART) initiative to enhance coordination in a statewide response to PFAS.

The PFAS response update was part of the larger Air & Waste Management Association (A&WMA) Spring Conference in Grand Rapids. The West Michigan chapter of the A&WMA hosted the event which was also attended by regional officials from the United States Environmental Protection Agency (USEPA).

Prior to the MDEQ briefing on PFAS, MDEQ director Heidi Grether outlined the state's environmental priorities in 2018 which include a \$110 million effort to rebuild Michigan's water infrastructure, as well as a \$74 million

proposal to bolster critical environmental protection and clean-up programs.

The MDEQ is leading the state's \$23 million effort to locate PFAS contamination, identify sources, and oversee remediation activities aimed at protecting the state's water resources and mitigating risks to the public.

PFAS compounds, such as perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), are a group of emerging and potentially harmful contaminants used in thousands of applications globally including firefighting foam, food packaging and cleaning products. These compounds are also used by industries such as tanneries, metal platers, and clothing manufacturers. In January 2018, the MDEQ took swift action to set a new legally-enforceable standard of 70 parts per trillion for PFOS and PFOA combined. Michigan is one of only a handful of states to establish enforceable limits for any PFAS compounds.

The MPART – the first multi-agency action team of its kind in the nation was established within the Gov-

ernor's office last November under the direction of Carol Isaacs. MPART is comprised of state agencies that have been investigating sites for potential contamination and taking actions to protect public health.

Members include key leaders of the Michigan Departments of Environmental Quality; Health and Human Services; Military and Veterans Affairs; Natural Resources; Agriculture and Rural Development; and Licensing and Regulatory Affairs. MPART is also coordinating with the USEPA, Centers for Disease Control and Prevention, National Guard Bureau, United States Department of Defense, and the appropriate local health departments and other government agencies.

In Michigan, PFAS contamination has been found in a number of areas throughout the state including northern Kent County where Wolverine Worldwide operated a tannery; and several military facilities, like the former Wurtsmith Air Force base, within the state.

Unused medications destroyed

The New York State Department of Environmental Conservation (DEC) collected 1,808 lbs. of pharmaceutical medications during DEC's annual Long Island Pharmaceutical Take Back event. A total of 24 long term healthcare facilities participated by collecting and destroying unused or expired pharmaceuticals. More than two tons have been collected since the program began in 2014.

The DEC program is designed to reduce the amount of pharmaceuticals that are flushed by facilities and can end up in Long Island's groundwater, bays and estuaries. Pharmaceuticals have been detected at low levels in New York waterways and Long Island's shallow groundwater.

Twenty-four facilities made up primarily of nursing, extended care, and rehabilitation centers, participated in this year's collection. The stored medications were taken to Covanta, which volunteered its services to incinerate the products.

Recycling Council of Ontario trials program to decrease food waste

Recycling Council of Ontario (RCO), with support through a \$273,700 grant from the Walmart Foundation, aims to apply a co-op model with a slightly different approach – saving food instead of selling food.

Food waste is the single largest waste stream lost to disposal and is the leading cause of methane emissions from landfills. While many communities have implemented curbside organics collection, the nonresidential sector loses over 70 percent of food waste to disposal.

"Municipalities have made residential organics programs effective through door to door collection efficiencies, and in-home source separation built on continuous public education and outreach," says Jo-Anne St. Godard, executive director, RCO. "Businesses and institutions, on the other hand, have organic material managed location by location, which eliminates standardized services the residential sector benefits from. That's why we want to trial a pre-competitive co-op model that offers simple and convenient options to recover edible food and divert compostable food waste material from disposal."

To do so, a centrally located consolidation site will serve a variety of functions for co-op members that will include industrial, commercial, and institutional properties that generate edible food and food waste, and the municipalities, organics processors, waste haulers, and food recovery agencies that will serve them:

- Receive food and food waste of any type or quantity in three streams:

- food waste for composting; edible foods for donation; packaged foods that require de-packaging for organics and packaging destined for recycling.

- Store and protect edible food to keep it separate, safe, and consumable until pick-up by a food recovery partner.

- Provide staging areas for de-packaging of expired or other unusable/unwanted food.

- Provide convenient pick-up location for service providers that take food and packaging materials from the site, including food recovery organizations, organic processors, and packaging recyclers.

The trial's success will be evaluated on a series of key performance indicators:

- Increased recovery of food waste for organics recycling.

- Increased recovery of edible food for donation.


- Optimized quality and reduced contamination of food scraps for organics recycling.

- Enhanced collection and processing of recyclable food packaging.

- Improved collection and storage to increase edible foods destined for donations.

- Reduced greenhouse gas emissions from collection and transport of materials between collection and final destination.

The co-op aims to establish a host site by spring 2018 and be in operation by early summer. The trial is expected to last six months with results published in winter of 2018.



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RUBBER

Grant funding to aid in tire recycling efforts



Local organizations and municipalities have been awarded grant funding through the Ohio EPA to establish and implement recycling, litter prevention, recycling market development and scrap tire recycling programs.

Local governments use these funds to support litter collection activities, develop education programming or create opportunities for residents to properly dispose of scrap tires through tire amnesty collection events. All local cleanup efforts will involve the work of

volunteers and take place on public property.

Jackson Township and Liberty Tire Services of Ohio were approved for \$300,000 for a scrap tire processor, and Stark-Tuscarawas-Wayne Joint Solid Waste Management District and Belden Brick Co. were approved for \$150,000 for a Model SDL-100 Attritor. Carroll-Columbiana-Harrison Solid Waste was approved for \$35,000 for scrap tire collection and disposal.



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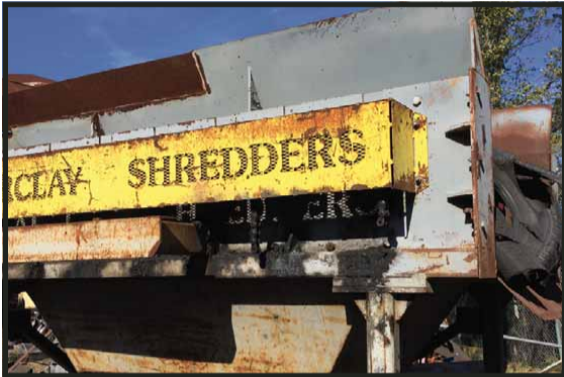
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1994 E-Z MODEL B CRUSHER

Stationary electric. Price includes loading. \$59,000



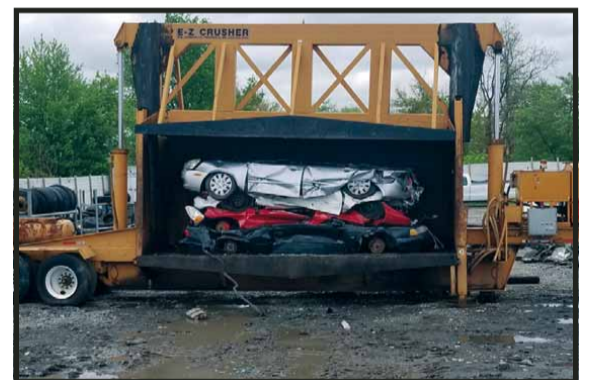
2006 KOMATSU PC300LC WITH SHEAR

Genesis GXP 400 R shear. Both in good working condition. \$180,000



2012 DOOSAN DX255 WITH SHEAR

With Genesis GXP 400 R shear. Runs every day. \$105,000



2002 E-Z CRUSHER

Very good condition. Only 4,700 hours. \$85,000



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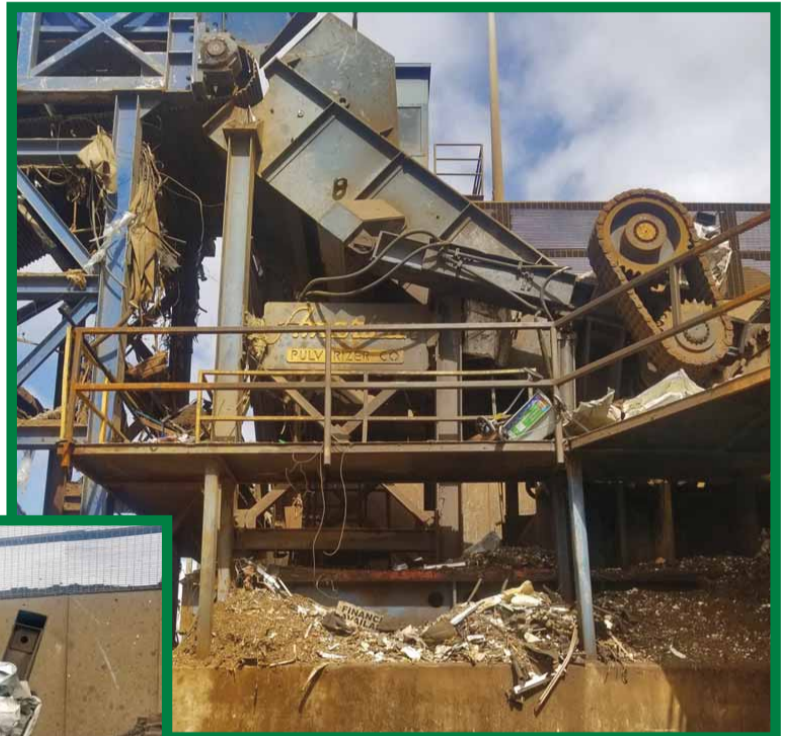
1995 E-Z MODEL A CRUSHER

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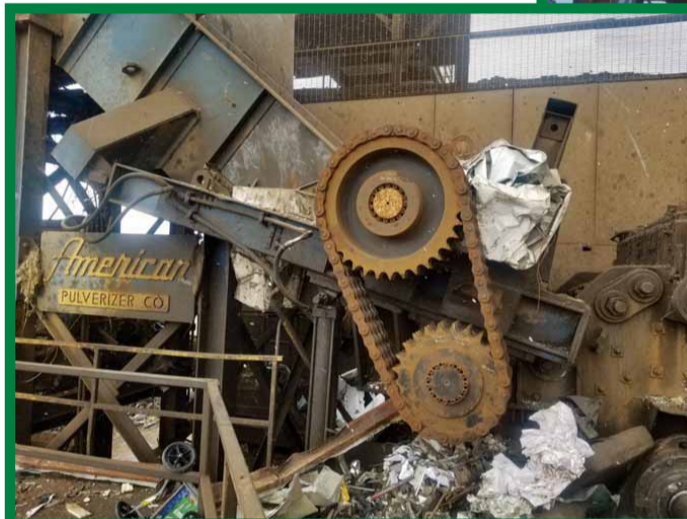
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METALS

Statistical anomaly explains China's soaring scrap usage statistics

As the world's largest steel producer, China is never too far from the thoughts of the steel scrap recycling industry. In a press release, the Bureau of International Recycling (BIR) pointed to last year's 64.2 percent leap in the Chinese steel industry's scrap use to 147.9 million tons, prompting a dramatic increase in the proportion of steel scrap used in the country's steel production to 17.8 percent.

During the preparation of the 9th edition of BIR's statistical analysis "World Steel Recycling in Figures 2013-2017", intensive talks have been held to evaluate the reasons for this unexpected development of China's steel scrap consumption. During their investigation, it was learned that this growth in scrap usage was closely related to China's closure of induction furnaces last year.

Induction furnace production has been a characteristic of the steel industry

in China for many years, but this sector's production and steel scrap consumption were not included in official figures. Estimates indicate that steel scrap use in the country's induction furnaces was around 60 million tons in 2016 – and yet these volumes did not feature in official statistics. Hence, the steel scrap use figures BIR has received since 2010 from the China Association of Metalscrap Utilization (CAMU) do not incorporate this large quantity of steel scrap.

Following the closure of the induction furnaces, most of the 60 million tons of steel scrap was used last year by China's basic oxygen furnace (BOF) and electric furnace (EF) steel producers. That was the reason behind China's sharp increase in steel scrap usage in 2017. The press release also mentioned a further 2.2 million tons of steel scrap was not used domestically in China but was instead exported.

Given that the steel scrap consumed by the now-idled induction furnaces was not included in the figures for 2016 and for preceding years, no direct comparisons can be made with the numbers for 2017.

The increase in China's steel scrap usage last year is in line with Chinese government plans for a general increase in steel scrap use in domestic steel production. For example, it has been heard that the country's BOF steelworks are being asked to increase their steel scrap use from 11 percent at present to at least 20 percent. Moreover, EF production accounted for 6.5 percent of China's overall steel production in 2017 but this figure is expected to climb over the coming years.

As a result of this development, further investments in steel scrap processing are planned, especially in shredder capacity.

Sims acquires Morley Recycling

Sims Metal Management Limited has acquired Morley Waste Traders and Lord and Midgley (Morley) businesses. Morley is a leading United Kingdom-based metal recycler with 10 facilities across Yorkshire. Sims Metal Management will now have a total of 50 metals recycling facilities across the United Kingdom.

Alistair Field, group chief executive officer of Sims Metal Management said, "Morley's operations in North England fit strategically with our own current footprint and will be a valuable addition to our Europe Metals business. The acquisition is consistent with our strategy of disciplined growth through complementary bolt-on acquisitions in our core markets."

The financial terms of the transaction were not disclosed, however, the purchase price consideration is not material to Sims Metal Management.

Anand Sen of Tata Steel named 2018 AIST Steelmaker of the Year

Anand Sen, president, total quality management and steel business, Tata Steel, was named Steelmaker of the Year at AISTech 2018 — The Iron & Steel Technology Conference and Exposition. The Steelmaker of the Year Award is presented annually by AIST to recognize notable leaders for their impact on the steel industry.

Sen was recognized for his visionary leadership and strategic planning which is driving decisive changes within Tata Steel to achieve technological leadership, operational excellence and a culture of innovation. Sen has pioneered the regionalization of advanced automotive steel grades for the Indian automobile industry, has driven Total

Quality Management philosophy across industry sectors, and has evolved the application of branding concepts focused on de-commoditizing steel.

Sen is responsible for the steel business, including marketing, sales, technology and promotion of Total Quality Management across Tata Steel India.

He is also board member of Xavier Institute of Management, Bhubaneswar, chair of the AIST India Member Chapter, and vice president of the Indian Institute of Metals, as well as a member of the advisory committees of the Centre of Excellence in Steel Technology at IIT Bombay and IIT Madras. Full bio.



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METALS

Steel imports up 34 percent in March 2018

Based on preliminary Census Bureau data, the American Iron and Steel Institute (AISI) reported that the U.S. imported a total of 3,327,000 net tons (NT) of steel in March 2018, including 2,480,000 net tons (NT) of finished steel (up 34.2 percent and 23.0 percent, respectively, vs. February final data). Year-to-date (YTD) through three months of 2018, total and finished steel imports are 8,690,000 and 6,831,000 NT, down 3.0 percent and 1.7 percent, respectively, vs. the same period in 2017. Annualized total and finished steel imports in 2018 would be 34.8 and 27.3 million NT, down 8.8 percent and 7.6 percent, respectively, vs. 2017. Finished steel import market share was an estimated 26 percent in March and is estimated at 25 percent YTD.

Key finished steel products with significant import increases in March compared to February include reinforc-

ing bars (up 215 percent), plates in coils (up 60 percent), cold rolled sheets (up 42 percent), hot rolled sheets (up 42 percent), sheets and strip hot dipped galvanized (up 30 percent), standard pipe (up 27 percent), oil country goods (up 27 percent), mechanical tubing (up 27 percent), and sheets and strip all other metallic coatings (up 12 percent). Major products with significant year-to-date (YTD) increases vs. the same period in 2017 include oil country goods (up 41 percent), hot rolled sheets (up 39 percent), plates in coils (up 33 percent), mechanical tubing (up 26 percent), hot rolled bars (up 17 percent) and line pipe (up 10 percent).

In March, the largest volumes of finished steel imports from offshore were from South Korea (317,000 NT, up 9 percent from February final), Japan (154,000 NT, up 60 percent), Turkey (134,000 NT, up 138 percent), Vietnam

U.S. IMPORTS OF FINISHED STEEL MILL PRODUCTS BY COUNTRY OF ORIGIN (Thousands of Net Tons)					
	MAR 2018	FEB 2018	2017 Full Year	2018 Annualized	% Change 2018 Annual vs. 2017
SOUTH KOREA	317	290	3,753	3,786	0.9%
JAPAN	154	97	1,504	1,573	4.6%
TURKEY	134	56	2,191	1,318	-39.8%
GERMANY	74	125	1,405	1,154	-17.9%
TAIWAN	79	78	1,245	1,098	-11.8%
BRAZIL	79	48	987	924	-6.4%
CHINA	68	67	813	828	1.9%
VIETNAM	81	33	749	719	-3.9%
All Others	1,495	1,223	16,914	15,921	-5.9%
TOTAL	2,480	2,017	29,561	27,323	-7.6%

(81,000 NT, up 147 percent) and Taiwan (79,000 NT, up 1 percent). For the first three months of 2018, the largest offshore suppliers were South Korea (947,000 NT, up 6 percent vs. the same period in 2017), Japan (393,000 NT, up

3 percent), Turkey (330,000 NT, down 59 percent), Germany (288,000 NT, up 27 percent) and Taiwan (275,000 NT, down 10 percent).

Ron Reich honored for contributions to recycling

The Institute of Scrap Recycling Industries (ISRI) recognized industry veteran Ron Reich with its Lifetime Achievement Award. Over the course of his career, which began more than five decades ago at H. Kramer & Co., Reich became a leading expert in metals identification. Many of his methods are still in use today throughout the industry.

Reich's career in the industry began when he worked at H. Kramer & Co. while on summer college break. After graduating from Bowling Green University, and serving in the United States

Marine Corps, he was employed by H. Kramer as warehouse manager. As manager he was responsible for receiving, processing and grading material for the furnaces producing brass ingot. After ten years, he was transferred to the El Segundo, California location as a buyer, later serving on the board of directors. In 1985, Reich began working as a nonferrous manager at Schnitzer Steel before moving on to Timco. This allowed him to expand his metals expertise into aluminum. After 20 years at Timco, Reich moved to Atlas Pacific.

Throughout his career he has lived by his motto, "A good deal is a good deal for everyone."

Reich is renowned throughout the industry for his knowledge of metal. In addition to the many seminars he taught on metals identification, he created a Metals Identification Chart which

proved invaluable to the recycling industry. He was also very active in ISRI. He was a member of the West Coast Chapter for more than 45 years, serving as an officer and board member during that time. From 1972-1974, Reich served as the Commander of the Jewish War Veterans scrap industry association.




Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
#1 Bushelings	per gross ton	\$272.00	292.00	301.00	310.00	390.00
#1 Bundles	per gross ton	262.00	254.00	282.00	295.00	395.00
Plate and Structural	per gross ton	272.00	250.00	285.00	287.00	371.00
#1 & 2 Mixed Steel	per gross ton	212.00	205.00	220.00	290.00	335.00
Shredder Bundles (tin)	per gross ton	185.00	184.00	215.00	205.00	226.00
Crushed Auto Bodies	per gross ton	185.00	184.00	215.00	205.00	226.00
Steel Turnings	per gross ton	98.00	102.00	100.00	186.00	260.00
#1 Copper	per pound	2.79	2.74	2.87	2.85	2.81
#2 Copper	per pound	2.54	2.64	2.74	2.73	2.63
Aluminum Cans	per pound	0.68	0.73	0.70	0.75	0.70
Auto Radiators	per pound	1.90	1.75	1.91	1.95	1.85
Aluminum Core Radiators	per pound	0.70	0.73	0.62	0.59	0.60
Heater Cores	per pound	1.31	1.21	1.34	1.33	1.65
Stainless Steel	per pound	0.67	0.65	0.63	0.62	0.65

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

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

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METALS

Nucor reports first quarter 2018 results

Nucor Corporation (NYSE: NUE) announced today consolidated net earnings of \$354.2 million, or \$1.10 per diluted share, for the first quarter of 2018. By comparison, Nucor reported consolidated net earnings of \$383.9 million, or \$1.20 per diluted share, for the fourth quarter of 2017 and \$356.9 million, or \$1.11 per diluted share, for the first quarter of 2017.

“Nucor’s disciplined strategy for profitable growth is working,” said John Ferriola, Nucor’s chairman, chief executive officer and president. “Our 2017 earnings were Nucor’s highest annual earnings since the cyclical peak year of 2008. The positive momentum has clearly carried over into 2018, as evidenced by our strong first quarter earnings and a bullish second quarter outlook.”

Included in the first quarter of 2018 results was an expense of \$21.8 million, or \$0.07 per diluted share, related to the write off of deferred tax assets due to the change in the tax status of a subsidiary.

Included in the fourth quarter of 2017 results was a net benefit of \$175.2 million, or \$0.55 per diluted share, related to the impacts of U.S. federal tax legislation enacted in the fourth quarter of 2017. Included in the first quarter of 2017 results were inventory related purchase accounting charges of \$9.8 million, or \$0.02 per diluted share, associated with the recent acquisitions of Southland Tube and Republic Conduit.

Nucor’s consolidated net sales increased 9 percent to \$5.57 billion in the first quarter of 2018 compared with \$5.09 billion in the fourth quarter of 2017 and increased 16 percent compared with \$4.82 billion in the first quarter of 2017. Average sales price per ton in the first quarter of 2018 increased 3 percent compared with the fourth quarter of 2017 and increased 9 percent compared with the first quarter of 2017. Total tons shipped to outside customers were 6,967,000 tons in the first quarter of 2018, a 6 percent increase from both the fourth quarter of 2017 and the first quarter of 2017. Total steel mill shipments in the first quarter of 2018 increased 8 percent from the fourth quarter of 2017 and increased 7 percent from the first quarter of 2017. Downstream steel products shipments to outside customers in the first quarter of 2018 increased 1 percent from the fourth quarter of 2017 and increased 15 percent from the first quarter of 2017.

The average scrap and scrap substitute cost per ton used during the first quarter of 2018 was \$337, a 6 percent increase compared to \$317 in the fourth quarter of 2017 and an increase of 19 percent compared to \$284 in the first quarter of 2017.

Overall operating rates at Nucor’s steel mills increased to 92 percent in the first quarter of 2018 as compared to 82 percent in the fourth quarter of 2017 and 88 percent in the first quarter of 2017.

Total steel mill energy costs in the first quarter of 2018 increased approximately \$1 per ton compared to both the fourth quarter of 2017 and first quarter of 2017 due to higher electricity unit costs.

Nucor’s liquidity position remains strong with \$760.0 million in cash and cash equivalents as of March 31, 2018. Subsequent to the end of the first quarter, Nucor amended and extended their untapped \$1.5 billion revolving credit facility to mature in April 2023.

The other day, my wife asked me to pass her lipstick but I accidentally passed her a glue stick. She still isn't talking to me.

Gerda reports increased net sales for 2017

Gerda closed 2017 with consolidated net sales of R\$ 37 billion, down 2 percent compared to the prior year, which was influenced by the 4 percent reduction in consolidated net shipments. In 2017, consolidated shipments amounted to 14.9 million tons. Steel production, however, advanced 3 percent to 16.1 million tons in the same period.

In 2017, Gerda’s results were adversely affected by non-recurring non-cash items of R\$ 861 million. These items refer to the reversal of the provision for contingencies due to the exclusion of ICMS from the PIS and COFINS tax calculation base and to accounting write-offs (fixed assets and goodwill) net of taxes. Due to these non-recurring items, Gerda is reporting adjusted net income and adjusted cash generation (EBITDA) to better demonstrate its performance and management efforts during the year. Adjusted EBITDA, which excludes non-recurring items, came to R\$ 4.3 billion in 2017, 7 percent higher than in the same period last year. Meanwhile, Gerda’s adjusted net income posted significant growth, from R\$ 91 million in 2016 to R\$ 522 million in 2017.

According to Gerda chief executive officer Gustavo Werneck, “We closed 2017 with improvement in our results. We reduced selling, general and administrative expenses by nearly R\$ 600 million in 2017 and net debt by around 10 percent, which improved our leverage indicators. Our divestment plan has grown to reach R\$ 6.3 billion in economic value over the last four years, which allows the Company to focus on its more profitable assets in the steel industry while continuing its transformation journey. We also generated R\$ 1.5 billion in free cash flow in the year, in line with capital discipline strategy implemented by the Company. In 2018, we will work intently to improve the profitability of our operations, to maximize free cash generation and to continue deleveraging.” In January, Gustavo Werneck accumulated temporarily responsibility for the North America long steel operation, until the announcement of a new leader, which is expected in next few months.

In the fourth quarter, consolidated net sales amounted to R\$ 9.8 billion, increasing 14 percent from the same period of 2016. Consolidated shipments came to 3.8 million tons, practically in line with the fourth quarter of 2016, while consolidated steel production grew 19 percent to 3.9 million tons. From October to December, adjusted cash generation (EBITDA) advanced 65 percent, to R\$ 1.2 billion. Adjusted net income for the fourth quarter improved to R\$ 262 million, compared to the net loss of R\$ 203 million in the same period last year.

SALVAGING Millions

by Ron Sturgeon
Autosalvageconsultant.com

Use email and texts when efficient

The first article in this series listed more than 25 tactics to increase your business success, all of them based on my experience. I started with nothing and didn’t attend college, so I know you can achieve maximum success, regardless of your education.

Emails are by far and away the quickest way to save minutes every day. Texts are likely even faster. I know...I know. You think that texts are only for the young. But it is what it is. Even my dentist has a service that texts me to remind me of my appointment. Texting is a tool every business owner should use when it is just as effective and saves time.

This series of articles is written by an overachiever that understands he can’t do it all by himself, he needs others helping, and there simply aren’t enough hours in the day. First, you’ve got to come to that realization. Then, you can move to seeking ways to do more.

Admittedly, I likely go too far towards using e-mails and texts, as there is very little that can’t be done that way. Frankly, I think of lot of folks just aren’t that comfortable with change, and that haven’t come to the realization that even the small amounts of time they save can be put to use doing something else that will make them more successful. Several of the other articles in this series address topics like how to properly delegate and how to squeeze an extra hour out of every day. Make use of the tools that save time, such as texting.

Is it less personal? Does that matter? Of course, but the question is how much does it matter, and is that all the time? Most matters are administrative. Not to mention that you can steal a minute when you want to, on your timetable, rather than waiting for others; there is no substitute for a sense of urgency.

Another tip is that you must have a good email client, like Outlook. The

young that think you can keep and do everything on your phone are just wrong, though you can certainly steal time when only your phone is available to give an instruction clarification, or answer a question. Then someone isn’t waiting for you. The cumulative effect of that is you speed tasks along to completion.

You need a good email program so that you can search emails, file and save the important ones, and, most critically, save all documents in document folders, not in the emails. The file structure for your email storage and document storage should be as close to the same as possible. So if you have a folder for legal for emails, you should have a document folder named legal as well.

Also, critical to success with email, you must handle them, then move them on to a folder or delete them. This makes you very efficient. If it’s in your inbox, it’s not handled. If you’ve got more than 20 or so emails in your inbox, you simply aren’t very efficient. Try cleaning out your inbox and making it a place where only pending items are kept. Less searching – less stress. Try it.

Also, make sure you always include an email address when you add a contact. I am always amazed the folks that only have a phone number, so of course they take 3 minutes to do something that could have been done, literally, in 10 seconds.

And make sure you have a full contact record for yourself in your phone, and know how to “share” it with others, instead of reading folks your phone number or email address to type into their phone.

Once you really start using emails and text more, others will soon learn that’s the best way to reach you and that will give momentum to your new efficiency tool. One other thing, make sure you receive email on your phone as well as your desktop.

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.

PAPER

The LEGO Group's goal for 2025 is sustainable packaging

The LEGO Group is aiming for 100 percent sustainable packaging by 2025. Currently, the majority of LEGO packaging, by weight, is cardboard or paper-based which is recyclable.

LEGO bricks are designed to be reused and handed down through generations, but not everyone keeps their LEGO boxes and other packaging.

The LEGO Group has taken several steps to improve the sustainability of its packaging:

- In 2018, the company began using recycled plastic in packaging 'blisters' – the transparent plastic windows which allow consumers to have a sneak peek into some LEGO boxes.

- This year, LEGO boxes in the U.S. and Canada started to feature the How2Recycle® label promoting packaging recycling and providing US and Canadian consumers with clear guidance to responsibly recycle their LEGO packaging.

- In 2017, plastic trays used in Advent Calendars were replaced with recyclable paper-pulp trays, saving up to 1 million plastic trays from going to the landfill.

- Approximately 75 percent of cardboard used to make LEGO boxes comes from recycled material.

- All paper and cardboard used in LEGO products and product packaging is recyclable, sustainably sourced and certified by the Forest Stewardship Council.

AF&PA releases updated paper reports

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

Containerboard

Containerboard production was up 3.5 percent compared to March 2017 and up 0.5 percent year-to-date. The month-over-month average daily production compared to February 2018 was 3.5 percent higher. The containerboard operating rate was 97.4 percent or 0.7 percentage points higher than the same month last year. Production for exports was 3.3 percent lower than March 2017 and 6.7 percent lower year-to-date.

Printing-Writing Paper Report

Total printing-writing paper shipments decreased five percent in March compared to March 2017. U.S. purchases of printing-writing papers decreased seven percent in March. Total printing-writing paper inventory levels decreased two percent from February 2018. Imports of printing-writing papers increased six percent compared to February 2017 imports, while exports increased five percent compared to February 2017.

- Coated mechanical (CM) paper shipments declined year-over-year for the tenth consecutive month. Imports of CM increased 21 percent compared to February 2017. Exports of CM decreased five percent in February compared to the same month in 2017.

- Shipments of coated free sheet (CFS) paper in March declined year-over-year. U.S. imports of CFS papers

increased two percent year-over-year in February. Exports of CFS papers decreased five percent year-over-year in February.

- Uncoated free sheet (UFS) paper shipments in March 2018 decreased year-over-year for the first time in 2018, following two months of year-over-year increases; meanwhile, shipments of uncoated mechanical (UM) papers decreased year-over-year in March 2018 for the 21st consecutive month.

Boxboard Report

Total boxboard production decreased 1.9 percent when compared to March 2017 but increased 5.2 percent from February.

Unbleached Kraft Boxboard pro-

duction increased over the same month a year ago but decreased compared to February.

Total Solid Bleached Boxboard and Liner production increased when compared to March 2017 and increased compared to February.

The production of Recycled Boxboard decreased compared to March 2017 and increased when compared to February.

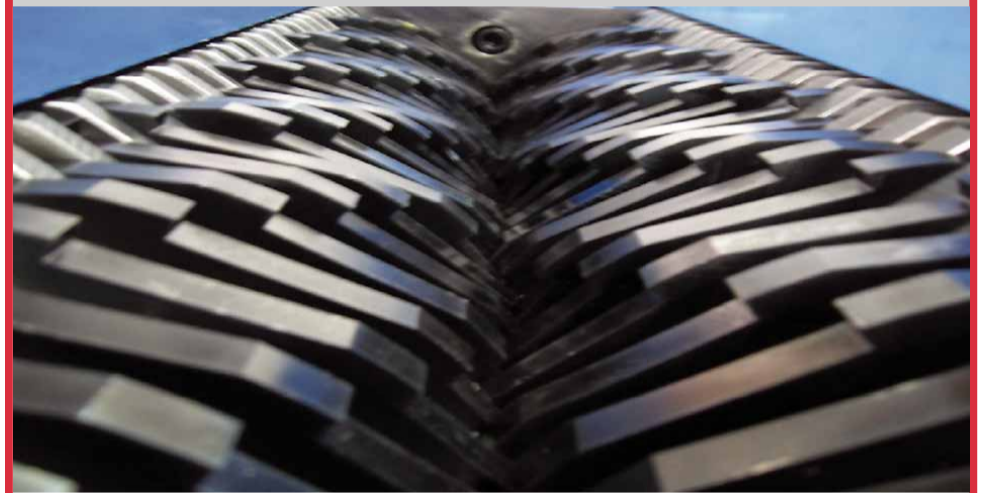
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BUSINESS BRIEFS

Sennegoben names Midland Dealer of the Year

At this year's ISRI Conference and Exhibition in Las Vegas, Midlantic Machinery was announced as Dealer of the Year by Sennebogen LLC president, Constantino Lannes. With five branch locations supporting Sennebogen in eastern Pennsylvania and Delaware, Midlantic may not be the largest distributor in Sennebogen's nationwide network. However, according to senior vice president Pat Sherwood, the firm's winning sales record in 2017 can be attributed to nothing more complicated than the old saying: "Plan to work and work the plan."

Each branch is staffed by a sales specialist who had been trained in material handling applications at the Sennebogen Training Center near Charlotte, North Carolina.

To complete the plan, each branch is well stocked with Sennebogen service parts, ensuring immediate delivery for customers' most common needs. According to Pat Sherwood, sales branches are equipped with flexible financing and lease packages from Sennebogen Capital, to help seal the deal.

Sherwood notes that sales and service for Sennebogen customers are a team effort. Along with working together to develop the business plan, Sennebogen specialists join Midlantic's sales staff to meet with the customer, review the application and make a recommendation for what the customer needs.

Nucor's Darsey to retire; Feldman to be promoted

Nucor Corporation announced that executive vice president of Raw Materials, James R. Darsey, plans to retire on June 9, 2018 after more than 39 years of service with Nucor.

Darsey began his career with Nucor in 1979 as design engineer at Vulcraft-Texas. He was promoted to engineering manager of Vulcraft-Utah in 1986 and served in the same role at Vulcraft-Texas from 1987 to 1995. Darsey was promoted to general manager of Vulcraft-Texas in 1995 and later served as general manager of Nucor Steel-Texas from 1999 to 2007. He was elected vice president of Nucor in 1996 and became president of the Vulcraft/Verco Group in 2007. Darsey was promoted to executive vice president of bar products in 2010. He later served as EVP of merchant and rebar products and most recently as EVP of raw materials.

Effective June 10, 2018, Craig A. Feldman will be promoted to executive vice president of raw materials.

Feldman began his career as a brokerage representative for The David J. Joseph Company (DJJ) in 1986 and then served as district manager of DJJ's Salt Lake City brokerage office.

In 1996, Feldman became commercial vice president at DJJ's subsidiary, Western Metals Recycling (WMR), and then served as president of WMR until 2004. Feldman served on the operational staff of DJJ's then-owner in The Netherlands from 2005 until his 2007 appointment as DJJ's executive vice president, recycling operations.

Feldman was promoted to president of DJJ in 2013 and became a vice president and general manager of Nucor Corporation when DJJ was acquired by Nucor in 2008. Upon his promotion to EVP, Feldman will retain his role as president of DJJ.

Caterpillar makes management changes

Following the announcement that group president Rob Charter has elected to retire, Caterpillar Inc. announced changes in responsibilities for two group presidents and the appointment of a new group president. All changes are effective June 1, 2018.

Caterpillar group president Bob De Lange, current construction industries group president, will oversee customer and dealer support, replacing Charter.

Caterpillar group president Tom Pellette, current energy and transportation group president, will now lead Construction Industries, replacing De Lange.

Caterpillar's board of directors has appointed Ramin Younessi a Caterpillar group president. Younessi will lead Caterpillar's energy and transportation group, replacing Pellette. Younessi is currently vice president of Caterpillar's Industrial Power Systems Division.

Younessi joined Caterpillar in 2013, bringing more than 25 years of outside senior leadership experience.

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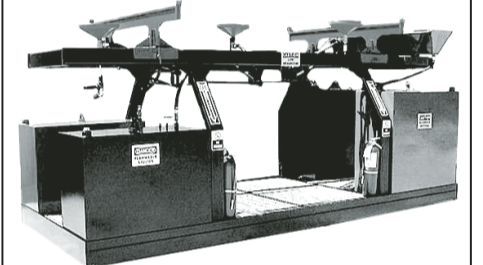


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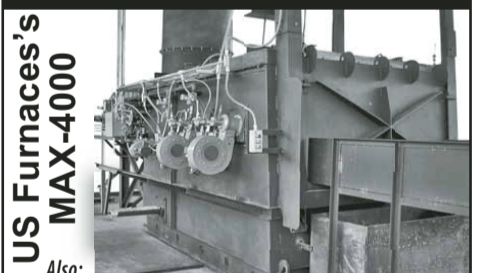
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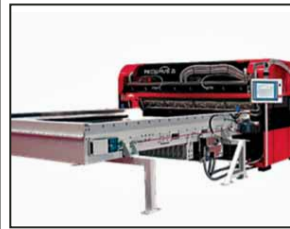


BOBCAT INTRODUCES REAR CAMERA KIT FOR SAFETY

Bobcat Company has added a Rear Camera Kit to its list of available options for Bobcat® skid-steer and compact track loaders. The kit offers the operator a continuous rear view of the machine to prevent contact with obstacles that may damage the loader.

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Rice Lake Weighing Systems has released the 882D belt scale integrator. As an integrator, the 882D offers multiple interfaces for PLC integration, customized programming and view processes.

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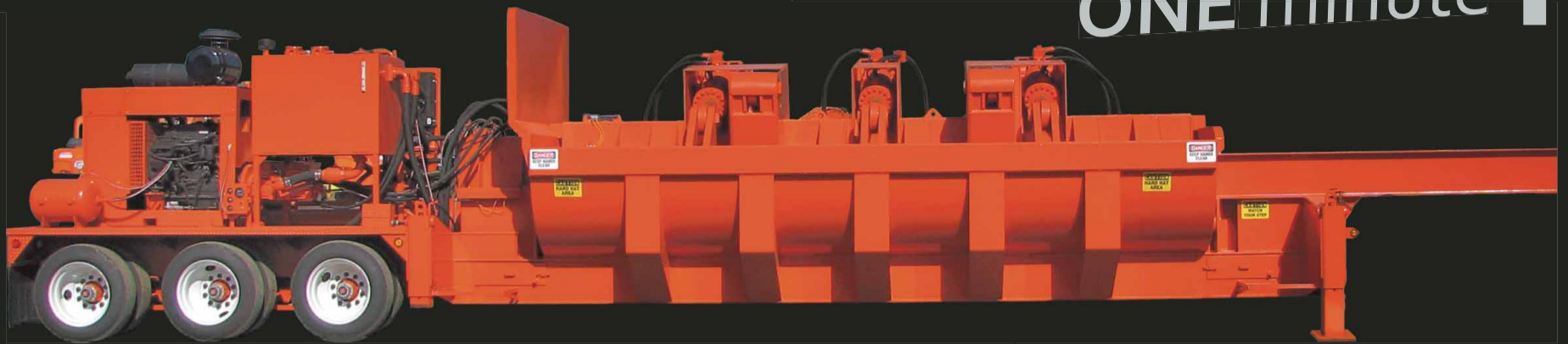
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Electronic recycling grows with surge in e-waste

by MAURA KELLER

mkeller@americanrecycler.com

The Rochester Institute of Technology (RIT), Staples Sustainable Innovation Lab, and the Consumer Technology Association, recently completed a comprehensive study to create a baseline “material footprint” of consumer technology used in U.S. households from over the last 25 years and how product and consumption trends are influencing the waste flows of this stream. This study focused on 21 of the most common consumer technologies used during this time, including TVs, phones, computers, monitors, and entertainment devices.

A key finding of the report was that across the household “consumer technology ecosystem,” the number and type of products sold have increased, but the net material consumption has declined to levels not seen since the early 1990s. Most of this material reduction is due to phasing out heavy products like cathode ray tube TVs and substitution with lightweight flat panel displays. In addition, many products are being designed with lighter materials, like aluminum instead of plastic or steel.

As Brad Swenson, vice president of Device Pit-stop explained, e-waste is the fastest growing waste product in the world. Electronics – specifically computers and mobile devices – contain toxic substances that may include lead, chromium, beryllium, and cadmium. “Unfortunately, there has been little progress in eliminating these toxins in electronics,” Swenson said. “So for now, the best solution is increased use of efficient green computing, reuse and responsible end of life recycling.”

“Recently, electronics recycling has changed drastically and will have to continue to evolve, because technology will not slow down,” said Jarrett Lettow, chief operating officer of Universal Waste Disposal. “Think of the old world of e-recycling in terms of transportation over the last 100 years. It started out as clunky, slow and painful to move. For those of us in recycling it’s been the seemingly overnight transition from desktop computers and tube TVs to an explosion of smartphones and tablets. Computers and box televisions have been inefficiently mined by the ‘recycling’ industry for years, and the net effect has resulted in us cannibalizing ourselves.”

According to the report by RIT, when considering specific materials, a key finding was that major materials of concern used historically to enable consumer technology products, like lead and mercury, have declined in parallel with product substitution due to technological progress.



PHOTO BY MARCOVARRO | DREAMSTIME

However, as the report indicates, there are new opportunities for study and innovation in the area of electronics recycling. For example, increased demand for mobile products resulted in greater use and disposal of lithium-ion batteries, and there is a clear opportunity to proactively develop recycling systems to target these emerging waste streams.

The waste flows show similar material breakdown over time, although CRT glass (containing lead) continues to flow out of U.S. households as consumers slowly get rid of legacy televisions. These results also show initial declines in bulk material waste flows, including plastic and ferrous metal (steel) as well as stabilization and slight decline in printed circuit boards (PCBs) which contain precious metals targeted by current recycling systems. Many of the changes observed in these figures demonstrate the effect of technological progress and consumer demand, particularly in the demand for widescreen but lightweight TV display technology.

One major change that electronic recyclers are facing is the increasing use of plastic over metal in electronic items. “Plastic is hard to separate during the recycling process because there are so many different polymers,” said Gary Diamond, chief executive officer, Shift Recycling.

As Diamond explained, there are two major barriers to the reuse or recycling of plastic in e-waste, namely the mixed plastic content and the presence of flame retardants. “A new study by the Illinois Sustainability Technology Center published in the journal ACS Sustainable Chemistry & Engineering suggests a way to deal with the first problem: mixed plastic polymers are dissolved in a solvent, which is then evaporated to leave the polymers behind,” Diamond said.

Steps Being Taken

Diamond said that as a result of continuing technological advances, electronic recyclers are currently in a challenging position. It is difficult for them to determine what the waste stream will look like (and thus determine its particular recycling requirements) even a year or two from now, let alone a longer period of time.

“There are some really interesting metals in electronics such as the rare earths but the traditional recycling chain has not figured out how to extract them all yet,” said Diamond. “Plus, the traditional recycling chain deals with standard mixtures such as copper and gold, for example, but now we’re seeing mixtures with 20 or maybe 50 different metals. Electronics recycling is becoming all about how to separate out those metals.”

See E-WASTE SURGE Page B2

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ISRI awards Dell recycling

In recognition of its effort to design its Latitude 5590 laptop and 5285 2-in-1 with recyclability being of high importance, the Institute of Scrap Recycling Industry (ISRI) named Dell Inc. as its 2018 Design for Recycling® (DFR) Award winner. The DFR Award is ISRI's most prestigious award given annually to the most innovative contribution to products designed with recycling in mind. It recognizes proactive steps made by manufacturers that have actively incorporated DFR principles into products and processes.

"Dell has a proven commitment to incorporating recyclability into its innovative product designs," said Robin Wiener, president of ISRI. "Having also won in 2014 for the Latitude 10 and XPS 10 tablets and Latitude E7240 laptop, Dell becomes the first two-time recipient of the DFR award. Dell has continued its groundbreaking designing by incorporating gold recycled from old electronics into its new products and ensuring that when Dell products reach the end of life stage, they can be recycled in a safe, environmentally-friendly manner. ISRI is once again proud to honor Dell with the Design for Recycling Award."

All Dell Latitude notebooks are designed to be more than 97 percent recyclable. The Latitude 5590 has additional features making it even easier to recycle. It contains a removable battery, is free of harmful substance such as mercury, eliminated the use of glues and adhesives, contains a modular design making easier to access and dis-

assemble, and uses standardized fasteners. The Latitude 5285 2-in-1 convertible notebook was launched in 2017 using gold recycled from used electronic products. Dell became the first PC manufacturer to use recycled gold in its motherboards rather than mining it.

To be eligible for ISRI's Design for Recycling Award, a product must be designed/redesigned and manufactured to:

- Contain the maximum amount of materials that are recyclable;
- Be easily recycled through current or newly designed recycling processes and procedures;
- Be cost effective to recycle whereby the cost to recycle does not exceed the value of its recycled materials;
- Be free of hazardous materials that are not recyclable or impede the recycling process;
- Minimize the time and cost involved to recycle the product;
- Reduce the use of raw materials by including recycled materials and/or components; and
- Have a net gain in the overall recyclability of the product while reducing the overall negative impact on the environment.

ISRI began presenting the award more than 10 years ago. Previous winners include EcoStrate, Samsung, LG Electronics, Inc., Cascades Fine Papers Group, Hewlett-Packard, The Herman Miller Company, and Wind Simplicity.

Porter County to close one electronic drop off location

Porter County, Indiana has announced that they have closed their Porter Street Department electronics recycling drop off location at 550 Beam Street, Indiana for remodeling.

Officials with the town and Porter County Recycling and Waste Reduction said that it's not yet known whether the service will continue after remodeling at the street department is complete.

The Portage and Valparaiso street departments collect electronics at the curbs of their residents for recycling, a service available through their partnership with Porter County Recycling & Waste Reduction. Other waste haulers around the county will not pick up electronics; however, residents have many convenient drop-off sites available:

- Valparaiso compost site: 2150 W. Lincolnway, Hwy 130
- Boone Grove compost site: 546 S. 400 W Hwy 8 to 400 West
- Portage Street Department: 2302 Hamstrom Road

These locations accept:

- Electronics including anything with an electrical cord or batteries.

•Media: DVDs, CDs, video games, floppy disks. No VHS, cassette tapes or anything that contains film.

•Toner/printer cartridges

These locations do not accept:

- Dehumidifiers
- Large appliances/white goods (stoves, refrigerators, washers/dryers)
- Air conditioners
- Water softeners
- Smoke detectors

The state of Indiana passed legislation that went into effect January 1, 2011, prohibiting households, public schools, and small businesses from mixing unwanted computer monitors, computers, televisions, printers, computer peripherals (such as keyboards and mice), DVD players, video cassette recorders or fax machines with municipal waste that is intended for disposal at a landfill or by burning or incineration.

The goal of the Indiana Department of Environmental Management is to keep computers and other electronics out of landfills through reuse, remanufacturing and recycling.

E-waste surge

Continued from Page B1

According to Swenson, there are a few key steps being taken within the recycling industry that are offsetting the inherent recyclability issues facing the electronics industry.

•Modern green computing – Consumers and businesses alike are increasingly using large amounts of cloud-computing for both storage and processing. Online gaming, office suite applications and online picture storage are all examples of the growing use of cloud computing.

•"Re-use" – computer manufacturers and software developers together are delivering computers that have a longer useful life. "In recent years, new operating systems are able to leverage hardware that is several generations older," Swenson said. "Additionally, many computer users are relying more on cloud-hosted applications and storage which decreases the need for fast processors and large storage disks."

•Recycling – Unfortunately, the vast majority of computers end up in landfills. "We need to do a better job in educating the public about the dangers of e-waste and how to properly dispose of it," Swenson said. There is a growing list of public and private businesses – including electronics retailers – who serve as drop off, or collector sites, and others who actually perform part or all the proper recycling processes.

"We have to change our recycling paradigm," Lettow said. "It must move from the world of scrap everything and pull out whatever minute valuables possible, to a system of valuable reuse. This begins ultimately with the OEMs—Apple, Samsung, Sony, etc. They have to bear some of the weight

of recycling by moving beyond labeling themselves as green and actually engineering products with the thought of how their products will ultimately transition. We should hold them accountable."

Lettow added that it is incumbent upon players in the recycling industry to take these products and remanufacture, or reuse them at every corner without the thought of scraping something until all creative opportunity has been exhausted.

"We as an industry must become more creative, and leverage technology as a kind of an ally to recreate itself," Lettow said.

Swenson said that while there is no easy solution to decrease e-waste, the further perpetuation of green computing, extending the life of devices via reuse and finally educating the public about why and how to properly dispose of electronics will help our planet.

Diamond said the bright side for electronics recycling is that there are more electronics being produced than ever. So, while each item may be less valuable to recycle, the overall volume of items makes up for the lowered value of each piece. In fact, he suggests that governments that fund recycling switch the focus from reimbursing by weight of recovered materials to reimbursing per electronic item recycled.

"We're becoming more efficient at recycling electronics and increasing commodity yield through technological advancements," says Diamond. "But who knows what the future holds? Could T-shirts become electronic items? Refrigerators will, for sure. Will your cell phone be replaced by a contact lens in your eye? We just can't predict what direction electronics are going in."

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Battery safety becomes new initiative

“Avoid the Spark” to educate Californians

To educate consumers on safe battery handling and recycling practices, Call2Recycle®, North America's largest consumer battery recycling program, is launching a battery safety campaign in conjunction with industry partners and Bay Area recycling centers and waste facilities.

More than ever before, consumers are enjoying the many benefits that come with the freedom to go unplugged. This means that battery usage is at an all-time high. Despite having battery laws in place, many Californians remain unaware of the hidden dangers tied to their used batteries. In 2017 alone, 65 percent of fires reported by 26 waste facilities throughout California were said to have been caused by batteries. There remains a gap between consumer understanding and responsibility when it comes to managing batteries once they reach their end-of-life. All of this points to the need for increased awareness and education around battery safety.

With 95 percent of Americans owning a cellphone and almost 50 percent owning e-readers or portable tablets, usage of rechargeable batteries is on the rise, increasing the need to educate consumers on the proper handling and disposal of batteries.

A recent Nielsen study commissioned by Call2Recycle found that:

- 60 percent of consumers threw away some or all of their single-use batteries, and

- 15 percent did the same with rechargeable batteries.

“Twenty years ago, lithium-based batteries were almost nonexistent,” said Carl Smith, chief executive officer and president of Call2Recycle, Inc. “But according to the research, numbers have increased with Americans' desire to go unplugged. 367 million lithium batteries were sold in 2016 alone, and of those, 44.3 million were consumed in California. This growing trend reinforces the need to increase consumer education efforts on battery safety. California is an excellent state to launch our Avoid the Spark education effort.”

To address this matter, Call2Recycle and its partners are leading the way to educate the public about safety.

Electronic waste recycling market attracts heavy investor interest

Electronic waste is growing at an alarming rate due to increase in the purchase of these devices recently by consumers. A report by Market Research Future which conducts research connected to the semiconductors and electronics sector among others lately made available a report on this sector. The industry is estimated to develop with a 17 percent compound annual growth rate approximately while achieving \$26 billion in revenue approximately by 2022.

Electronic waste has grown at a considerable rate due to increased purchasing power and increased customer numbers. Scarcity in the number of facilities that can effectively handle electronic waste has given rise to various kinds of environment related problems. Traditional methods of recycling are not very effective in controlling the damage they cause to the environment. Therefore, there has been an increased level of interest towards creating facilities, technologies and methods that are well suited to handling this problem.

The industry for electronic waste recycling is categorized on the basis of components of processed materials and sources of equipment processed. On the basis of the category of components of processed material, the plastic sector is further separated into high impact polystyrene (HIPS) and acrylonitrile butadiene styrene (ABS) among others. The metal category is divided into silver, copper, steel and glass along with other categories. The source of equipment category is further divided into IT and telecommunication, household appliances and consumer electronics.

The region wide study of the electronic waste recycling sector includes region such as Asia Pacific, Europe, North America and Rest of the World. It has been witnessed that the European market will most likely control the waste recycling market for electronics due to causes such as environmental concerns and government initiatives. The research also states that the North American market has the second main market portion in the market for electronic waste recycling. The Asia Pacific region's Electronic Waste Recycling Market is anticipated to display optimistic growth over the forecast period due to causes such as

increasing electronic wastes and rising environmental concerns. In the Asia-Pacific region, countries like Japan and China whose government has taken the main effort for electronic waste management.

The profitable circumstances accessible in this market are being applied by candidates who are trying to increase their market coverage by focused development which can encourage the expansion of this business sector. The businesses in this trade area are combining their resources to attain their vision for achieving a substantial portion of the business as early as possible.

This has raised the possibilities for the approaching growth period significantly. The merchandise that are being provided presently differ greatly because of the rationale of the robust pace of technological discoveries. This consequence is productive for companies so they can aim to uphold their commercial enterprise's liquidity to take the most effective decisions in terms of strategy execution and designing.

The key players in the market for electronic waste recycling are Electronic Recyclers International, Inc. (U.S.), Polymers, Inc. (California), Aurubis AG (Germany), Boliden AB (Sweden) and Sims Metal Management Ltd. (Australia) to name a few.

Pennsylvania county details program

Lackawanna County, Pennsylvania residents will have the opportunity to recycle electronic devices for free during a two week period in mid-June through a new program with one television and one computer monitor/accessory per household being accepted.

“This is a very important service for our residents. It is a great opportunity to discard electronic devices at no cost while also protecting our environment,” explained commissioner Patrick M. O'Malley. “We encourage everyone to participate so as to not litter our roadsides and common areas with televisions and computer hardware.”


“Aside from encouraging everyone to take the initiative to clean-out their homes broken or unused electronics, we are also working to be a clean and green society,” said commissioner Jerry Notarianni. “Maintaining our County's landscape and avoiding unsightly blight are important elements when marketing our area to investors and providing a positive view of our communities to out-of-town visitors.”

The municipalities participating in the program will implement special policies for the drop off and pick up of items. They will be responsible for alerting their residents on whether to either place the items curbside or bring them to their respective DPW facilities.

The majority of the county's municipalities are on board with the program.

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EQUIPMENT SPOTLIGHT

Conveyors

by **MARY M. COX**

maryc@americanrecycler.com

The disposal of electronic waste (e-waste) is one of the most difficult disposal dilemmas we face. Electronic waste consists of old TVs, monitors, laptops, cell phones – the list goes on. Many of the components in these electronic devices aren't particularly valuable so recycling methods vary.

Fluent Conveyor products are customized to each application brought to them by a client. "We offer slider bed transfer conveyors, infeed conveyors and more. With most waste applications, transfer and infeed conveyors are required to get products moved through the processes involved.

"Solutions we provide depend on the complexity of the application and requirements from an engineering

standpoint. There is a great deal of planning and implementation required for a project to succeed. Our team provides over 30 years combined experience in engineering and sales of conveyors and over 40 years of manufacturing experience," explained Jeremy Axel, sales representative.

Core markets for the firm include: custom applications, e-waste, bio-fuel, corrugated, paper, single stream, dual stream and package handling. "Industry regulations include the ban on exports from China and some general manufacturing guidelines. I believe we'll see more robotics in the waste processing industry, and an increase in automation and technology to help remove contamination within resold materials. Waste and processing indus-

tries overall are trending upward in technology as manufacturing, dealers and integrators find solutions to remove waste from landfills and reuse/repurpose as much as possible. With e-waste, processes vary state-by-state and conveyors aren't regulated but we always ensure that our clients are aware of all related specifications for their process," said Axel.

E-scrap components are difficult to recover, and the Karl W. Schmidt Company is committed to addressing the predicament. There are a large number of parts involved and a wide variety of sizes and different materials too—some of them of course, quite small. Further complicating the situation, often the devices contain hazardous material. And the problem isn't going away. Electronic waste is already 5 percent of the total waste in the U.S., and it's growing every year.

"We've put our talent for innovation to work to overcome the challenges posed by e-waste recycling. The knowledge we've acquired through many years of designing recycling equipment gives us insight into what will really work, and we thoroughly test all of our e-recycling equipment to ensure we're providing clients with products that meet our standards, explained Karl Satrum, sales manager.

He added, "If you want electronic waste equipment that represents the best in engineering while exemplifying the latest in technological know-how, we'd love to talk to you about our innovative ideas for solving the difficult problem of e-waste."

"The most recognized and versatile of the PRAB conveyor line is the traditional steel belt conveyor. Steel belt conveyors are a relatively inexpensive and practical way to move and elevate large volumes of material in harsh environments," Mike Hook, national sales manager, stated.

Hook also said that "Due to the large amount of variation in the e-scrap environment, the proper conveyor system for moving this material may contain a variety of conveyor products. To ensure that maximum uptime is achieved over the long life of the equipment, PRAB provides full-process consultation and product testing on in-house lab systems at no cost to clients. Our full-service sales,

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Continued



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See SPOTLIGHT, Page B6



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Victoria plans ahead for e-waste ban

The Andrews Labor Government, Australia, is upgrading e-waste collection and storage facilities across Victoria to help them receive and safely manage increasing levels of e-waste.

Minister for Energy, Environment and Climate Change Lily D'Ambrosio and Member for Macedon Mary-Anne Thomas visited Australia's first lithium and hand-held battery recycling facility at Envirostream Australia in Gisborne – announcing that \$16.5 million will go towards upgrading more than 130 e-waste collection sites.

The Labor Government's ban on e-waste will start July 1, 2019.

Starting the ban mid next year will allow extra time for new infrastructure to be in place, for the statewide education campaign to reach more people, and for those managing e-waste – particularly local councils – to prepare for the new arrangements.

Envirostream Australia will partner with Planet Ark and Mobile Muster on a network of battery disposal units.

The amount of e-waste generated in Victoria is projected to increase from 109,000 tons in 2015 to approximately 256,000 tons in 2035.

The upgrades will ensure 98 percent of Victorians in metropolitan areas will be within a 20 minute drive of an e-waste disposal point, and 98 percent in regional areas will be within a 30 minute drive of a disposal point.

Apple adds donations to trade-in and recycling program for Earth Day 2018

For every device received at Apple stores and apple.com through the Apple GiveBack program through April 30, the company made a donation to the non-profit Conservation International.

As part of its ongoing recycling effort, the company also debuted Daisy, a robot that can more efficiently disassemble an iPhone to recover valuable materials. Both Apple GiveBack and Daisy support Apple's commitment to create a healthier planet through innovation — and help the company move a step closer to its goal of making its products using only recycled or renewable materials.

Conservation International uses science, policy and partnerships to protect the natural we rely on for food, fresh water and livelihood. Founded in 1987, the organization works in more than 30 countries on six continents.

Apple's newest disassembly robot, Daisy, is the most efficient way to reclaim more of the valuable materials stored in iPhone. Created through years of R&D, Daisy incorporates revolutionary technology based on Apple's learnings from Liam, its first disassembly robot launched in 2016. Daisy is made from some of Liam's parts and is capable of disassembling nine versions of iPhone and sorting their high-quality components for recycling. Daisy can take apart up to 200 iPhone devices per hour, removing and sorting components, so that Apple can recover materials at a higher quality.



—Daisy

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INDUSTRY PROFILE

A Closer Look

by Donna Currie

Missouri Organics

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Missouri Organics is truly a family company. Kevin Anderson, the company's vice president and one of the owners, said that his father, Dave, started the company in 1991 in partnership with another person. The idea behind the company was to recover organic materials that the state of Missouri had just banned from landfills. Since Dave had been working as a chimney sweep, he was particularly interested in the wood that could be sold to his customers as firewood.

In 1993, Dave bought out his partner and "started fiddling with making compost," Kevin said. At first, the process was very crude, using hand held screeners to sort and remove debris.

When Kevin was in college intent on becoming an airline pilot, his father told him that he needed help at the organics company. Kevin had quite a few years of school left and thought that the new business was interesting, so he left school and joined the business. A year later, Kevin's brother, Jason, graduated from high school and joined the business as well.

Other family members working for the company include Kevin's mother, who manages the accounting as well as "several aunts, uncles, and cousins that work with us." Fortunately, the family works together well and they get along together despite the occasional differences of opinion. "We're lucky in that respect," Kevin said.

Missouri Organics works with Kansas City municipal staff to manage residential yard waste from curbside collections, and they also have several drop-off sites that accept materials from both residents and contractors. On weekends, residents can drop off materials for free, and as many as 100 cars might show up. On weekdays, the sites are open to everyone, but a fee is charged.

The company also works with other municipalities, and they also pick up from about 250 customers who produce food waste, including grocery stores, restaurants, and corporate facilities. "We compost just about anything we can get our hands on," Kevin said.

A new endeavor is the recent purchase of a de-packager that can separate food from its packaging so that the food can be composted and the packaging can be recycled. This machine will process a large variety of packaged foods including spoiled or out of date cartons of milk or yogurt, packages of chips and snack foods, and other packaged products that would normally be landfilled.

Once the organic material has been recovered, metal and plastic will be sent to recyclers and other materials will be sent to a waste-to-energy facility. While some materials might end up in landfills, Kevin said it would be minimal.

Over the years, the company has been focusing more and more on food waste. Kevin explained that yard waste, compost, and mulch are all seasonal products, but "food waste is always available." Kevin expects to see the trend to reduce food waste to continue, along with the desire to minimize landfill use.

One thing that is helping company growth is that "the Midwest has come alive as far as urban farming." People are interested in nutrient dense foods, and eating foods that have been grown locally. "We can only take in as much as we can sell," Kevin said, and the interest in gardening has created more customers for the compost and other materials.

The compost is made on a 15 acre compost pad. Yard waste is first ground and processed, then mixed with food waste and laid out in open windrows. The material is carefully managed as far as the temperature and moisture content, and it is turned regularly so that it composts as quickly as possible. Still, it takes 6-8 weeks to be ready. Then, it needs to be screened to remove debris.

While the company has a handle on how to make compost efficiently, one problem keeps arising – contamination. "You have to find a way to educate people," Kevin said. Otherwise, plastic bags, straws, and other contaminants end up in the food waste and need to be sorted out of the compost. No one wants to see plastic utensils in their garden.

Besides selling standard compost, the company also makes special mixes, including one that is designed for use on rooftop gardens. The finished mix weighs about the same whether it is wet or dry, so it won't be too heavy for the roofs to support.

While rooftop gardens might seem like a luxury item, they are a good solution for storm water control. When the rooftop gardens capture rainwater, it minimizes runoff.

While it's illegal to send organic materials to landfills in Missouri, it's legal in Kansas, so compostable materials often cross the state line since landfill fees are often comparable to the cost of dropping them off for composting. Since Missouri Organics is close to the state line, this sometimes affects their ability to bring in materials.

On the sales side, local homeowners are most interested in the mulches because that's a change they can see, but Kevin said that compost could help them grow better lawns and gardens. Contractors already know the benefits, but homeowners may need to learn more about that.

Kevin explained that adding compost in the fall means less fertilizer in the spring, and after a few years of adding compost, fertilizer is no longer needed. An added benefit is that the soil will absorb and retain water better, so less watering is required. And that improvement comes from a product that was originally considered unwanted waste material. "Ultimately," Kevin said, "it's nice to come to work and know you're doing something positive. It's a feel-good type of work."

Staples expands recycling to include coffee brewers

Staples has become the first and only national retailer to accept both single serve and traditional coffee brewers for free recycling in stores as a part of its larger electronics recycling program. The expansion of the Staples free electronics recycling program is available to all customers in the U.S.

Since starting the program in 2007, Staples has collected more than 400 million pounds of electronic waste, including ink and toner, which is the weight of roughly 13 Brooklyn Bridges.

"We know coffee is an important part of the morning routine for many

customers. We hope customers make recycling their coffee makers and other electronics at Staples a habit, just like their coffee fix," said Jake Swenson, director, sustainability, Staples. "The expansion of our electronics recycling program is another way we're making it easier for customers to support the environment, along with our large assortment of more sustainable products and free ink and toner recycling."

For a full list of eligible items, view this article on www.AmericanRecycler.com.

Spotlight

Continued from Page B4

engineering and technical service departments all work together to optimize the customers' process and mitigate their risk."

Though steel belt conveyors make up much of the conveyor market, PRAB also manufactures other types of conveyance products. For instance, rubber belt conveyors are an economical method for moving scrap over long distances.

Mesh belt conveyors allow hot scrap to cool during the conveyance process. Magnetic conveyor products can be used to transfer and/or sort magnetically susceptible material. Drag flight and screw conveyors offer efficient transfer of flow-able wet material in a sealed environment. Oscillating (horizontal transfer) conveyors move large volumes of scrap without the scrap contacting any of the moving components of the machine, therefore eliminating much of the wear and associated maintenance observed in most other forms of conveyance.

"PRAB Conveyors help combat the challenges of removing scrap and spent fluids away from core operations which allows for optimum production cycles, longer run times, increased worker safety, improved housekeeping and less fork lift traffic. Unique proprietary designs such as the Pivot Belt™ and powered automatic take-up, along with built-to-suit designs differentiate PRAB within the marketplace," stated Hook.

Starting in 1950 with a small fabrication shop for the automotive industry, PRAB has expanded worldwide with a product line that includes a full line of heavy duty scrap conveyors, metal chip processing equipment, fluid filtration equipment and industrial water treatment systems for the automotive, aerospace, electronics, defense, energy, and other industries.

Some companies specialize in providing conveyor components. Sampla Belting Megadyne has manufactured conveyor belts for several years. "Speed, impact, cuts, abrasion and precision...all those words may surround the challenges involved when manufac-



Prab, Inc.

turing a conveyor belt for recycling settings. Some applications require a little bit of finesse to find the right belt for the process involved. For example, a situation may require a light weight, thin belt that can move at very high speeds, while magnetic waves pass through it and it runs through small pulleys—all while simultaneously remaining strong and resistant to cuts and abrasion," Marco Martinez Guerrero, business development manager, commented.

MANUFACTURERS

Continued from Page B4

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Battery companies looking to lock up their share of cobalt for use in li-ion technology

by USA News Group

The rush in demand for cobalt has sent the price soaring and now large battery manufacturers are looking to lock up their share of the global cobalt supplies at source.

Companies developing resources of cobalt supplies that could offer solutions include Katanga Mining Limited, Fortune Minerals Limited, eCobalt Solutions and Bankers Cobalt Corp.

Battery makers are obviously reacting to the potential shortage as a result of hot electric vehicle (EV) demand and are searching for ready partners with cobalt production opportunities.

The DRC (Democratic Republic of Congo), which produces roughly two-thirds of the world's cobalt, also recently voted to raise taxes and royalties on profits and metals produced. That includes cobalt. That's in addition to the fact that the DRC presents serious impediments over human rights violations in mining cobalt.

Several companies are already looking to expand the socially responsible mining of cobalt to increase supplies including Katanga Mining Limited, eCobalt Solutions, and Fortune Minerals Limited.

Some junior miners are seeking a work around for the question of sourcing by seeking only socially responsible sources. Bankers Cobalt Corp. for example has taken the advance steps of putting the appropriate policies and procedures in place to manage the risks of operating the DRC.

EV demand is pushing the envelope

The proliferation of EVs led by Tesla Motors has resulted in a boon for previously overlooked metals; mainly lithium, cobalt and nickel. These metals loosely known as "battery metals" are

critical in the making of rechargeable batteries that are used to store power in EVs as well as a wide range of consumer electronics.

Cobalt is particularly susceptible to supply constraints because of a combination of factors.

First, about 97 percent of all the cobalt in the world is produced as a by-product of copper mining, which means that demand spikes of cobalt themselves are not enough to necessitate massive capital outlays for supply expansion.

Cobalt mining is also highly concentrated in volatile regions, with the DRC contributing about 60 percent of global cobalt production.

With conflict in the region rising, cobalt exports have been affected significantly. Human rights violations such as child labor and extremely low wages in DRC have also plagued the industry, and many socially responsible companies even consider Congolese cobalt untouchable at this point.

In light of this supply bottleneck, battery companies across the globe are rushing to secure enough cobalt supply to keep their operations in line.

In South Korea, local electronics companies including LG and Samsung that consume high volumes of cobalt have started to put long-term arrangements in place that will help them get new sources of the metal.

SK Innovation entered into a seven-year supply agreement for cobalt and nickel with metal developer Australian Miners.

Recycling another factor

Other companies are pursuing strategic partnerships with recycling firms that are able to recycle cobalt collected from discarded smartphones.

It is estimated that recycling batteries from discarded Samsung Galaxy

Note 7 alone would yield as much as 150 tons of cobalt.

Indeed, cobalt recycling has been a major factor in offsetting scarcity of cobalt and this will come into play more in the future.

As the first generation of mass produced electric vehicles begin to get discarded in the next decade, a vast amount of recyclable cobalt will return into the supply stream, helping the process into even higher gear.

Bringing on cobalt: the real solution

The option of bringing more primary cobalt mines into operation holds what is the most viable way forward.

A number of junior companies have identified new cobalt reserves, and these are likely to be some of the most prominent new sources brought online in a few years.

eCobalt is developing a project in Idaho to process "pure clay" cobalt which has a capacity of 1500 tons of the metal per year. Global Energy Metals is also looking into the possibility of reviving production at Werner Lake in Ontario, which has not been in operation since the 1940s.

By 2025, it is estimated that global cobalt production will be about 150,000 tons, when existing alternatives are fully active.

Regardless of the relief offered by recycling and possible primary cobalt mining, battery companies are going to need to join forces now as the market firms up and reaches a consensus on just how much cobalt we are going to need and what the market is willing to pay for this scarce material.

Potential Comparables

Katanga Mining Limited, through its subsidiary, Kamoto Copper Company SA, engages in the copper and cobalt mining and related activities in

the Democratic Republic of Congo. It is involved in the exploration, mining, refurbishment, rehabilitation, development, and operation of the Kamoto/Mashamba East mining complex; the Kamoto Oliveira Virgule copper and cobalt mine; T17 open pit and T17 underground mines; various oxide open pit resources; the Kamoto concentrator; and the Luilu metallurgical plant. The company is based in Whitehorse, Canada. Katanga Mining Limited is a subsidiary of Glencore International AG.

Fortune Minerals Limited explores for and develops specialty metals, base metals, and precious metals in Canada. The company explores for gold, cobalt, bismuth, copper, silver, lead, and zinc deposits. It primarily holds 100 percent interest in the NICO gold-cobalt-bismuth-copper project located in the Northwest Territories. Fortune Minerals Limited was founded in 1988 and is headquartered in London, Canada.

eCobalt Solutions Inc. engages in the exploration and development of mineral properties in Canada, the United States, and Mexico. It primarily explores for base and precious metals, and uranium, as well as copper, gold, silver, lead, and zinc deposits. The company owns 100 percent interest in its primary asset, the Idaho Cobalt project that includes a mine/mill site located in Lemhi County, Idaho, producing battery grade cobalt salts for rechargeable battery and renewable energy sectors. eCobalt Solutions Inc. was founded in 1988 and is headquartered in Vancouver, Canada.

For a direct link to an in-depth look, view this article on www.AmericanRecycler.com.

EPA donates 60 laptop computers to high schools

The U.S. Environmental Protection Agency donated 60 used laptop computers to two Philadelphia high schools – Abraham Lincoln High School and Simon Gratz High School.

The EPA computers will be placed in the schools' computer labs for students to use for research and study purposes.

"Electronics recycling gives old electronics new life," said EPA deputy regional administrator Cecil Rodrigues. "The reuse of laptops provides both educational benefits while also improving the environment by conserving resources and reducing air and water pollution."

EPA presented the computers to Simon Gratz principal Peter Langer and Abraham Lincoln principal Jack Nelson during an event at Simon Gratz High School.

"The EPA's donation will help us fulfill our mission of providing students the academic and personal

skills they need to be truly successful in high school, after graduation and beyond," said Simon Gratz High School principal Peter Langer. "Students will use these laptops to do everything from homework to filling out scholarship applications. We're ready to put these computers to good use and can't thank the EPA enough for selecting our school."

The most recently available data shows that in the U.S. more than 3.36 million tons of electronics entered the waste stream in 2014. Of this, more than 1.40 million tons were donated or recycled, avoiding more than 3.6 million tons of CO2 emissions, equivalent to taking 715,000 cars off the road for a year. Reuse of the computers also keeps harmful electronics waste out of landfills.

EPA partnered with the U.S. General Services Administration Computers for Learning Program to donate the computers.

To learn more about the Computers for Learning Program, go to: <https://www.gsa.gov/tools/property-disposal-auctions-ertools/computers-for-learning-program>.

A man and his eldest son went to have their photographs taken together, and the photographer said to the young man, "It will make a better picture if you put your hand on your father's shoulder." "Hmmm," said the father, "it would make a more realistic picture if he put it in my pocket."

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