

American Recycler

NewsVoice of Salvage, Waste and Recycling

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FOCUS: Paper/Plastics

Paper and plastic recycling holding steady



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HANGE SERVICE REQUESTED



Reducing waste in the C&D industry

by MAURA KELLER

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Back in October, Austin, Texas passed an ordinance requiring at least 50 percent of unused materials from construction be recycled or reused. Other municipalities are joining suit and mandating recycling rates for construction. In fact, many municipalities have passed ordinances mandating the recycling of Clean Construction and Demotion Debris (CCDD). This is a growing trend – not only to avoid the waste associated with poor waste habits, but also to realize the very real benefit of diverting construction and demolition debris from disposal into publicly funded landfills.

"According to the World Economic's report on The Future of Construction, 50 percent of the solid waste produced in the U.S. is generated in the construction industry," said Michael Shomberg, global vice president, engineering & construction solutions at SAP Connected Construction (SAP). "We are seeing both proactive and regulatory measures to reduce the percentage. We also have seen construction companies partnering with recycling companies on a project-by-project basis to help them with this process. Demo companies often are more sophisticated in this process and will separate and optimize the revenue they can get from recycling where general construction companies are really looking for simplicity in the process and are willing to let the recycling company do that work and get the additional margin."

Many countries already have similar requirements to those passed in Austin, Texas and industry experts expect them to spread in North America. Also, groups like the USBGC in their LEED requirements have very aggressive goals for recycling as part of their standard.

"Unfortunately, Texas as a whole is behind the curve in terms of recycling. It is ranked 49th in the U.S. for overall recycling rates. That said, recycling mandates are growing steadily and quickly nationally if you include increases or expansions of established mandates," said Daniel Hartsig, manager, new construction services at Transwestern. "Usually, where cost of land is high and public protections from air and water pollution exist, the payoff from recycling waste is realized faster. Texas' low cost of land and limited regulation on dumping is likely the main factor for lagging behind, with Austin and Dallas being the only places keeping the state from falling behind Louisiana."

The top 10 recycling and reuse states are all in the Northeast and Northwest of the U.S. As Hartsig explained, these areas realized the economic benefits of recycling early and invested in infrastructure



As buildings come down and new ones go up, the recycle process will be addressed more and more on the front end of the building process.

PHOTO COURTESY OF ADAMO GROUP, IN

in the '80s and '90s, backed by much more sweeping regulations than Austin.

"In those states and cities that have established recycling and reuse infrastructure, construction waste is required to be handled separately from municipal solid waste (MSW) and hazardous materials, but also one or more strategies have been implemented that have been increasing gradually and relatively painlessly over time," Hartsig said. Some simply have higher tipping fees, which drives construction and demolition waste to recycling centers instead, where tipping fees are low or there may even be payment for waste. Some areas have a blanket total percentage mandate, such as Chicago, which requires 50 percent of all construction and demolition waste to be recycled. And some have specific material mandates, such as Vermont, which requires 100 percent of several easily recycled materials to be recycled."

According to environmental and commercial real estate law expert, William Anaya, an officer with Greensfelder, Hemker & Gale, P.C., the clean construction or demolition debris (CCDD) requirements across municipalities all are fairly similar.

"Various percentages of clean – non-hazardous, no asbestos, no PCBs, no hazardous waste constituents – construction and demolition debris must be recycled according to the municipal ordinance," Anaya said. "The percentages vary – some require 50 percent recycling, others 70 percent landfill diversion and 5 percent reuse – but the concept is the same. The requirement of clean is universal. It

makes sense because municipalities fund and manage landfills, and recycling is an alternative that saves landfill space in addition to being less wasteful."

The Greater Impact

Dustin White, construction manager at C1S in Dallas, Texas recently had a project which required tracking of demo materials. "We were required to separate concrete, roofing material, etc., and track weights," White said. "Because I had the requirement, I sought out a demolition company that could track this for me. The company was able to prepare and track demoed materials through their dumpster company. We did the same with our site dumpster. What I have seen so far as in most things in construction the responsibility is delegated as far is it can be. In this case, it was the dumpster company. I think the world of waste removal is going to be pushed to supply more and more tracking services for reporting needed to comply with code."

According to Hartsig, the regulation in Austin means very little for the recycling industry but is more significant for construction, retail and reuse industries. "Austin's goal of 50 percent recycle or reuse of 'unused' construction material is an extremely small step, and probably more of an annoyance for the construction industry than an effectual regulation," Hartsig said. Here's why:

•A lot of leftover construction product is likely to be classified as "used" once exposed to weather or handling.

•Many contractors are already good at trimming costs by right-sizing

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REI achieves LEED Platinum and Net Zero Energy at Arizona distribution center

REI shared a major milestone in its continued work to lead on sustainable operations. Its newest distribution center, located in Goodyear, Arizona, has achieved LEED (Leadership in Energy and Environmental Design) Platinum certification - the highest level in the U.S. Green Building Council's (USGBC) green building rating system - making it the first distribution center in the U.S. to achieve both LEED Platinum certification and Net Zero Energy. The facility is the first distribution center to earn Platinum certification in 2016 and, at 400,000 sq.ft., is the second largest Platinum certified distribution or warehouse facility in the U.S.

REI achieved LEED Platinum certification by implementing sustainable strategies and solutions throughout the building, including:

•Renewable energy: The 2.2 megawatt solar system produces renewable energy onsite, enough to power the entire facility annually. The system is expected to provide REI with 20 years of free energy and pay for itself in 5 years.

•Water conservation & restoration: The distribution center features a non-evaporative cooling system – fully powered by renewable energy – to keep employees cool in the desert heat and save millions of gallons of water every year. REI will also help restore the nearby Verde River, enhancing water flows and creating new areas for paddling and other water sports. This project has balanced the entire co-op's water footprint for two years, which USGBC rewards through its Water Restoration Certificates pilot credit.

•Eco-friendly building features: REI installed energy-efficient features throughout the building, including conveyors that shut off when no items are present, an air conditioning system powered by solar energy while creating an unparalleled comfort for the employees, LED lights with motion sensors and strategically placed skylights, drought-tolerant landscaping with an underground drip irrigation system, and restrooms with no-water urinals and low-flush toilets.

•Recycling program: Approximately 97 percent of all materials at the distribution center are recycled and less than 3 percent of waste is sent to landfills. The recycling program includes plastic, paper, wood and cardboard.

The LEED rating system, developed by USGBC, is the foremost program for the design, construction, operations and maintenance of high performance green buildings. REI's Goodyear facility is the co-op's first project to earn Platinum certification. Overall, just 11 percent of all LEED certified projects earn Platinum certification.

REI uses thoughtful sustainable design for the construction of all new buildings and currently has seven LEED certified facilities, including the first-ever retail store in the country to earn a LEED Gold rating for Commercial Interiors in Portland, Oregon in 2004. The combined size of REI's LEED certified buildings is more than 1 million square feet, and the co-op's developer is also pursuing LEED certification for the building that houses the new flagship store in Washington, D.C.

Specifications for glass and inbound mixed recyclables to be reviewed by ISRI

Industries (ISRI) board of directors will consider the addition of new specifications for glass and inbound mixed recyclables for material recovery facilities (MRF) during its Winter Meeting. ISRI's Paper and Plastics Divisions recently approved each of the specifications. These specifications are intended to increase understanding of the issues processors face when working with complex streams from municipal program sources.

The MRF glass specifications and inbound MRF specifications are available online for review. The MRF glass specifications were approved by the divisions at the Fall Board & Committee Meetings in Salt Lake City. The inbound MRF specifications were approved by the divisions during the Winter ISRI board and committee

The Institute of Scrap Recycling meetings held in January. Both were developed in consultation with ISRI's MRF Council and paper and plastic scrap recycling industry members with extensive experience working with scrap streams sourced from municipal collection facilities and programs.

> At the board of directors meeting, the board may choose to adopt, amend, or reject the recommendations of the Division or table them pending further review. More information about the rules governing the procedures from the addition, amendment, or withdrawal of ISRI's scrap specifications can be found in the Scrap Specifications Circular. To submit comments, recommendations, or questions contact Joe Pickard. There will be an open comment period for 30 days following the vote by the board.

Blue Sphere shares status update

Blue Sphere Corporation, an international independent power producer, provided a project update for the waste-to-energy facility it has developed and is currently under construction in Johnston, Rhode Island.

Blue Sphere has been developing a 3.2MW anaerobic digestion biogas facility that will sell electricity to the national grid under a 15 year power purchase agreement.

The Auspark update stated that the facilities' weighting station has

been installed and connected; the large reception building has been equipped with the Austep proprietary patented pretreatment equipment; the primary construction of the Biopulper; hot digesters and cold digester are all complete: the installation of the membrane for the gas holder is complete; the assembly of the piping circuits necessary for the heat exchangers is complete; the biogas line is complete; and the construction of the safety torches is complete.



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Alcoa closes Suralco Refinery

Alcoa Corporation intends to permanently close the Suralco alumina refinery and bauxite mines in Suriname, fully curtailed since November 2015. The Government of the Republic of Suriname and Alcoa continue to develop definitive agreements concerning Suralco's remaining activities in the country and the future of the bauxite industry in Suriname. Pending completion of those agreements, Alcoa will continue to operate the Afobaka hydroelectric facility, which supplied power to the Suralco operations.

"We are working in partnership with the Government of the Republic of Suriname to reach the best possible solution that would enable Suriname to maintain its bauxite industry. Dialogue is ongoing and progress is being made," said Roy Harvey, Chief Executive Officer of Alcoa.

As a result of the permanent closure of the mines and refinery, Alcoa will record \$90 million in restructuringrelated charges, after tax and noncontrolling interest in the 2016 fourth quarter.

New survey indicates Americans do not believe what they hear about recycling

Regardless of fact or fiction, a new survey released by the Institute of Scrap Recycling Industries (ISRI) and conducted online by Harris Poll, shows U.S. adults do not accept common statements made about the recycling industry to be true. When presented a series of statements, four truths and four myths, and asked if each believable, more than half of the respondents in every case choose not to believe the statement. The true statements, however, were shown to be more believable than those that were false.

"For years the recycling industry has fought back against common public misperceptions about the value of recycling. The data from this poll shows that we have been successful in combatting those myths," said Robin Wiener, president of ISRI. "However it also shows that much more work needs to be done to educate the public on the many economic and environmental benefits recycling provides, as well as how recycling has evolved as an industry. ISRI will continue to serve as the leader in promoting the value of recycling."

Respondents were provided with eight statements. Four of them were true statements and four were false. For each they were asked if they believed the statement was true. The results are as follows:

True Statements:

•Recycling reduces greenhouse gas emissions: 49 percent believed to be true.

•The U.S. recycling industry is highly technical and sophisticated: 28 percent believed to be true.

•There are enough materials recycled in the U.S. to meet the production needs of domestic manufacturers (e.g. enough steel to make cars, enough aluminum to make soda cans, enough materials for building construction): 27 percent believed to be true.

•The history of recycling dates back as early as the cave man: 19 percent believed to be true.

False Statements:

•Recyclable material placed in a residential recycling bin is just mixed with trash later anyway: 11 percent believed to be true.

•A product made of recycled material is of a lesser quality that one made from new, raw materials: 8 percent believed to be true.

•There are no/little economic benefits to recycling: 7 percent believed to be

•Recycling does not save energy or conserve natural resources: 5 percent believed to be true.

73 percent believed at least one of the true statements, while 22 percent believed at least one myth to be true.

This survey was conducted online within the U.S. by Harris Poll on behalf of ISRI from December 16th through the 20th, 2016. Among 2,088 adults ages 18 and older participated. This online survey is not based on a probability sample and therefore no estimate of theoretical sampling error can be calculated.

New Jersey's DEP awards \$14.3 million in recycling grants

New Jersey's local governments will receive \$14.3 million in state grants to help implement and further enhance recvcling efforts in their communities.

The grants are based on 2014 recycling performance and awarded through the state's Recycling Enhancement Act.

"Each of us can make a real difference for New Jersey's environment simply by recycling," Department of Environmental Protection Commissioner Bob Martin said. "The impacts of recycling reach far beyond keeping our environment clean and safe. Recycling conserves resources and results in less waste going to landfills or incinerators. It helps local governments save money, and leads to economic development and job creation.

"New Jersey still has the goal of achieving 50 percent municipal recycling," Commissioner Martin continued. "These grants demonstrate our continued commitment to safeguarding the environment and show why New Jersey remains a national recycling leader."

The recycling grant program is funded by a \$3 per ton surcharge on trash

state. The grant program rewards local governments and enhances recycling efforts through initiatives such as running tire collection days, providing recycling receptacles and maintaining leaf composting operations. Each award is based on materials collected and recycled, and can be used in various ways to improve recycling results.

In 2014, New Jersey generated 9.6 million tons of municipal solid waste (MSW). DEP documented the recycling of 3.9 million tons of MSW and the disposal of 5.6 million tons of MSW, for an MSW recycling rate of 41 percent.

By comparison, the 2014 national MSW recycling rate was 34 percent, according to the U.S. Environmental Protection Agency.

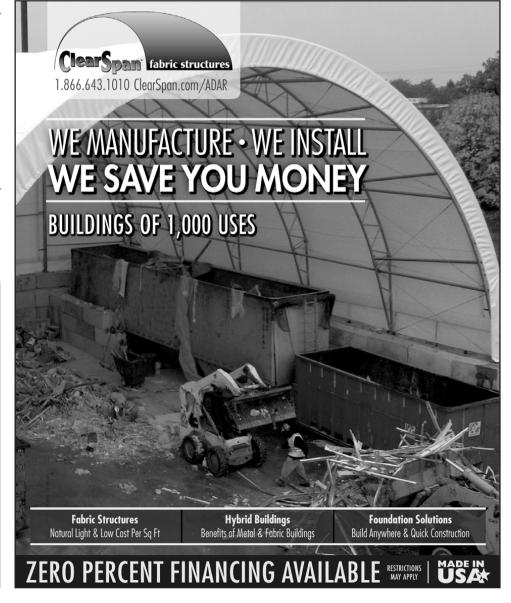
Overall, New Jersey in 2014 generated more than 20.8 million tons of solid waste, which includes municipal waste plus construction debris and other types of non-municipal waste. Of this, more than 12.8 million tons were recycled, for an overall recycling rate of 62 percent.

Municipalities receiving the highest grant awards for 2014 recycling efforts are: Newark (Essex County), \$552,249; Vineland (Cumberland County), \$306,675; Jersey City (Hudson County), \$298,152; Paterson (Passaic County), \$227,130; Secaucus (Hudson County); \$209,815; Woodbridge (Middlesex County), \$208,520; Clifton (Passaic County), \$180,157; South Brunswick (Middlesex County), \$175,783; Toms

River (Ocean County), \$174,085; Paramus (Bergen County), \$143,280; Edison (Middlesex County), \$142,127; Hamilton (Mercer County), \$137,687; and Monroe (Middlesex County), \$136,349.

> For a full list of grant recipients, view this article on www.AmericanRecycler.com.





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Consumers recycle 14 million pounds of used batteries in 2016

sumers recycled a record setting 14 million pounds of batteries and cellphones in collections throughout the U.S. and Canada in 2016. Enhanced accessibility and consumer awareness played a vital role in driving the 12 percent increase in total weight of materials collected and responsibly recycled by the organization over 2015.

This major environmental achievement marks the 20th consecutive year of increased collections by Call2Recycle, contributing to the 129 million pounds of batteries diverted from landfills over the past 21 years.

The continued year-over-year growth of the battery stewardship program is a result of strong, collaborative relationships between Call2Recycle and its robust network of committed industry stewards and collection partners, including retailers and municipalities. Through these partnerships, rechargeable and primary battery collections in the U.S. amounted to nearly

Call2Recycle, Inc. reported that con- 8 million pounds last year — an 11 percent increase over 2015. Collections from public, consumer-facing networks totaled more than 4.7 million pounds of batteries, a rise of 28 percent. Collections from municipalities alone saw substantial growth of 150 percent year-to-date.

> Additionally, the number of primary batteries collected skyrocketed in 2016 with a 158 percent increase. This growth was fueled in part by legislation that led Vermont to become the first state in the U.S. requiring producers to finance a collection and recycling program for singleuse (primary) batteries. As the appointed stewardship organization for Vermont, Call2Recycle provides convenient dropoff locations for residents to responsibly recycle their batteries. As a result, more than 114,000 pounds of batteries have been collected statewide in 2016, an astounding 187 percent increase from the previous year.

> Canadian provinces with strong participation and commitment from retailers

and municipalities fostered the rise of total collection results by 12 percent compared to 2015. Most notable results were in British Columbia, Manitoba and Quebec, where Call2Recycle serves as the approved battery stewardship program. Quebec led in battery collections over 2.4 million pounds collected, a nearly 20 percent increase. Manitoba also saw double digit growth over 2015, while British Colombia and Ontario each increased collections by eight percent.

Providing easy and convenient recycling options to consumers through the establishment of close to 30,000 collection locations across North America, has also contributed to the organization's continued success. Today, more than 88 percent of residents in the U.S. and Canada live within 10 miles of one of Call2Recycle's public drop-off locations.

Lakeshore Recycling recognized as one of nation's best employers

Lakeshore Recycling Systems (LRS), the Midwest's leading recycling and waste diversion services provider, has been named one of the nation's Best and Brightest Companies to Work For®. The only waste and recycling company to be named to the list, this esteemed honor recognizes LRS within the top 85 largest U.S. businesses with more than 301 employees.

The Best and Brightest Companies to Work For competition identifies and honors organizations that display a commitment to excellence in their human resource practices and employee enrichment. Organizations are assessed based on categories such as communication, work/life balance, employee education, diversity, recognition, retention and more. National nominees were benchmarked against every state in the U.S.

National recognition is supplementary to LRS being named one of Chicago's 2016 Best and Brightest Companies to Work For in May 2016 in the large business category (organizations exceeding 300 employees).

In early 2016, LRS substantially grew its benefits package, built a health and fitness center in its corporate headquarters, created new internal events for employee collaboration, created a Junior Executive Board for easier accessibility and increased its community outreach with respected charities to raise donations for meaningful causes. Through active participation in neighborhood parades, charity events, school visits and other community events, LRS strives to be a good corporate citizen by showcasing the passion and involvement of its most valuable asset, its employees.



Events Calendar

March 6th-9th

Association of Postconsumer Plastic Recyclers Member Meeting.

Hyatt Regency, New Orleans, Louisiana. 202-316-3046 • www.plasticsrecycling.org

March 7th-11th

CONEXPO-CON/AGG 2017. Las Vegas Convention Center, Las Vegas, Nevada. 800-867-6060 • www.conexpoconagg.com

March 12th-15th

Southeast Recycling Conference & Tradeshow. Hilton San Destin Golf Resort & Spa, Destin, Florida. 800-441-7949 www.southeastrecyclingtradeshow.com

March 14th-15th

Tennessee Environmental Conference. Meadowview Conference Resort & Convention Center, Kingsport, Tennessee. 423-854-5485 • www.tnenvironment.com

March 27th-29th

Aluminum Association Spring Meeting. The Ritz-Carlton Reynolds, Lake Oconee Trail, Greensboro, Georgia. 703-358-2960 • www.aluminum.org

March 27th-30th

SWANApalooza 2017. Reno Convention Center, Reno, Nevada, 800-467-9262 • www.swana.org

May 8th-11th

WasteExpo 2017. Ernest N. Morial Convention Center, New Orleans, Lousiana. 800-927-5007 • www.wasteexpo.com

May 16th-17th

TCEQ Environmental Trade Fair and Conference (ETFC) 2017. Austin Convention Center, Austin, Texas. 512-239-3143 • www.tceq.texas.gov

May 21st-24th

NY Federation of Solid Waste Association's Solid Waste & Recycling Conference with Trade Show.

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

September 12th-14th

The Battery Show Exhibition & Conference 2017. Suburban Collection Showplace, Novi, Michigan. 855-436-8683 • www.thebatteryshow.com



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Children's artwork on trucks supports recycling efforts

The City of Lake Worth, Florida initiated a unique recycling awareness contest; Lake Worth's Refuse Division invited all four elementary schools in Lake Worth, Florida to participate in the city's recycling awareness project, in which the winning artist's design would be 'wrapped' onto two new refuse trucks that were acquired from Scranton, Iowabased manufacturer New Way®.

Students were tasked with developing a poster and slogan that demonstrates the types of recyclable material, showcases school and community pride, and ultimately, promotes recycling within the city. The contest yielded 154 entries from Barton Elementary and 74 entries from South Grade Elementary.

In an effort to increase recycling awareness, the Lake Worth, Florida Refuse Division acquired a New Way DiamondbackTM Rear Loader that was slated to be wrapped with the winning design from Barton Elementary School. Additionally, a New Way SidewinderTM



automated side-loader was wrapped with the winning design from South

"Think Globally, Act Locally RECY-CLE", was added to both refuse trucks. Grade Elementary School. The slogan, The Diamondback and Sidewinder are

fitting billboards for a community known for being the 'artistic center' of Palm Beach County.

New Way vice president of sales Phil Allen was excited to learn of their truck being featured in the contest. "The Lake Worth Refuse Division is doing a great thing here," said Allen. "Not only are they giving these children a chance to have their artwork featured, but they are also educating the community on the importance of recycling and waste management." Allen went on to say, "Our team is proud to be included in this project and hope that the community recognizes Lake Worth's efforts in improving their quality of life."

Visitors and residents may have already seen the new refuse trucks, including the completed artwork, as they were recently put into service. The artwork contest exemplifies, and further solidifies, the Lake Worth tagline: This isn't just a lifestyle. It's an art form.

Veolia completes acquisition

Veolia Energy North America Holdings, Inc. has acquired Enovity, a San Francisco-based energy services firm. Enovity is a strategic acquisition that complements Veolia's existing SourceOne energy services business, providing a platform for expanding the company's geographic footprint.

Buildings account for more than 40 percent of all energy consumption in the U.S., and more than 30 percent of all energy consumed worldwide. Improving energy efficiency in buildings is fundamental for reducing greenhouse gas emissions in cities, decreasing costs and improving productivity for businesses and strengthening energy security; and thus, the circular economy.

The building energy services industry is a fast growing sector, driven by environmental regulation and energy costs, that touches all markets, especially regionally in California. The U.S. building energy efficiency market, a \$64 billion industry, plays an ever critical role in controlling energy consumption and CO2 emissions in cities.

Bandit Industries settles with the EPA

Bandit Industries Inc. has reached a settlement with the U.S. Environmental Protection Agency (EPA) regarding civil penalties for alleged violations of the Transition Program for Equipment Manufacturers (TPEM) under the Federal Clean Air Act.

The settlement follows Bandit's voluntary self-disclosure to the EPA after Bandit discovered one of its suppliers of engines shipped to Bandit from 2012 to 2015 approximately 2,300 diesel engines that Bandit understood to be legally conforming engines.

Discussions with the government have been ongoing since February, 2015. In

November 2016, EPA and Bandit were able to reach an agreement to resolve the government's allegations. Bandit does not admit liability and Bandit expressly denies any intentional or deliberate TPEM non-compliance in the agreement.

The settlement will not affect Bandit's ability to continue to operate or supply quality products and service to its customers. Bandit has not had any previous clean air violations and has put in measures to ensure all engines installed on their equipment comply with the Federal Clean Air Act.



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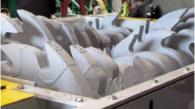
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SSI Shredding Systems, Inc.

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C&D Waste

■Continued from Page 1

purchases. This practice would probably increase.

•Larger construction companies may simply warehouse their "unused" scrap, as many may already do.

•Some larger retailers and producers already allow the return of "unused" materials, which removes some of the demand for recycling.

"Companies that don't buy back or allow the return of 'unused' product may see increase in demands for such services, but I don't foresee a jump in demand for salvaged or 'lightly used products in the Austin construction market that could support such specialty outlets," Hartsig said. "For the tiny percentage of actual construction waste that's left after all of the above, small handling centers may spring up to take specialized, high value waste or collect mixed product that they can charge a high price for and then send to more advanced recycling communities. The former probably already exist in Austin, while the latter might be new."

It should be noted that Austin's cap of 2.5 lbs. of construction waste per sq.ft. of construction work is much more stringent than the regulation noted above. This requirement is significantly weakened by excluding demolition, and big box construction (mansions, box stores, warehouse and distribution centers, etc.) will be almost completely unaffected by this cap.

"Many producers are trying to reduce packaging of their materials to cut costs, and this cap supports extra effort on the construction companies' part to right-size purchasing," Hartsig said. "Even still, small retail renovations and some office and residential buildings will have some difficulty achieving this requirement."

Challenges Aplenty

With regulations regarding construction and demolition waste taking center stage across the U.S., the challenges for both C&D companies as well as recycling companies with regard to these mandates are plenty.

"As these regulations are enacted across the country, they are not likely to be implemented in a consistent way so C&D companies may struggle to understand the nuances of the local regulations," Shomberg said. "This could be an opportunity for the recyclers to assume the compliance responsibility and charge for that." For example, the Illinois EPA encourages recycling of CCDD, but does not have a percentage requirement.

What's more, construction and demolition companies need to be "in the know."

"I have seen the pain of a crew putting the wrong stuff in the wrong dumpster and losing a day of labor to correct it," White said. "Training will be a big issue. The job of demolition is not handled by people who are used to paper pushing type tracking. Temp labor is utilized frequently. This will increase costs for temp labor suppliers to provide better training and also affect the companies with permanent workers. The hardest part of a job-site is that it moves constantly, like a two year old. If you turn your head too long, something will be done wrong. The recycle initiative is one more component that today's already stretched superintendents will have to supervise. Estimating will need to evolve to understand the cost of disposal better." With those companies involved in demolition and generating the CCDD, the law requires more than a passing understanding of OSHA Communication Standards concerning worker safety and asbestos.

"Demotion contractors must also be completely conversant with the Clean Air Act – especially, the Asbestos NESHAP regulations," Anaya said. "We also recommend pre-demolition inspections and, if necessary, tests and often waste characterization. In addition, most municipalities require an application for a permit for demolition and, as a minimum, require an asbestos survey. In the absence of these protocols, demolition contractors are subject to accusations of sham recycling and substantial fines and penalties, including criminal sanctions associated with perjury in the case of the sworn to affidavits referred to above, but also penalties for unlawful disposal."

Anaya noted that sham recycling i.e., circumventing waste disposal laws under the rubric of recycling is a concern at the regulatory level. "Things like foundry sand cannot be recycled primarily because of the contamination associated with the foundry process – the solvents and the metals cannot be magically recycled at the local school yard as playground sand," Anaya said.

Anaya's recommendation to clients that either generate or collect C&D is to set up defensible in-house protocols to determine recyclable material from waste material.

"Recycling entities know the materials and the risks and are generally very sophisticated," Anaya said. "I recommend that they establish an inspection regimen, keep records of the material accepted and rejected, with a holding area if need be with secondary containment, with written protocols so that, if need be, we can establish a foundation for the evidence of compliance in the event of an enforcement action or litigation."

On the Horizon

Areas that have been slower to realize the economic benefits of C&D waste recycling and are now putting in new rules are going through the same process others did decades ago. As Hartsig explained, the state or city has to create the demand through mandate, permitting or fee structure, then infrastructure has to

be rapidly developed to handle demand, or waste has to be exported. The next step is investment by companies that want to repackage or reprocesses it.

"Until that happens, the local market cannot take advantage of the resulting products and the state cannot benefit from tax revenues," Hartsig said. "This is primarily why mandates have, in the past, started slow."

As a result, construction companies in those states that are catching up often have to retool their management practices and spend a little effort seeking out more diversified waste management partners.

"In general, when new mandates are implemented, the big national waste management companies have the leverage, logistical experience and resources to monopolize on such mandates," Hartsig said. "Smaller local waste management companies typically fall behind, but since Austin's mandate is so minimal compared to most other state or city C&D requirements, it might spur some small entrepreneurial activity. For the recycling industry as a whole, the stronger the mandates become – it means more products, higher volumes, more competition, more efficiency and lower prices for products, which drives up demand for the products and fuels the whole system."

Industry experts agree, recycling programs are here to stay. "There is no benefit to cutting corners, and there is money to be made and value to add to your customers in doing it correctly – establishing and following best practice protocols," Anaya said. "The challenge in any endeavor involving waste is proving compliance with waste restrictions; being able to support that the activity was bona fide, compliant and not sham recycling."

Indeed, White added that as the buildings come down and new ones go up the recycle process will be addressed more and more on the front end of building.

"Before the first nail goes in, the builder will be required to supply a demo recycle plan for when that building is demolished years from that time," White said. "The best way to handle recycling is to pre-plan using recyclable materials and think through the logistics of recapturing those materials."

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American Recycler February 2017, Page A7

Whirlpool launches consumer food recycler



Whirlpool Corporation has launched the Zera[™] Food Recycler, a kitchen appliance that turns food waste into fertilizer.

The Zera system – from WLabs of Whirlpool Corporation, the company's innovation incubator – debuted at CES 2017 and is available for pre-orders on Indiegogo.

This innovative product is the first indoor recycler in the U.S. that converts a week's worth of food waste into ready-to-use homemade fertilizer within 24 hours. The beautifully designed device conveniently fits into the kitchen, and with a simple push of a button converts household food waste into homemade fertilizer through an easy and convenient process.

Zera Food Recycler can break down one week's worth of the average U.S.

family's food waste within 24 hours by using a combination of oxygen, moisture, heat and mixing to expedite the decomposition process. Unlike traditional composting methods, families are able to use the Zera system year round regardless of the weather and can remotely operate the appliance through the easy-to-use Whirlpool mobile app.

According to a study on food waste commissioned by Whirlpool Corporation, an average family in the U.S. produces over 400 lbs. of food waste every year, which accounts for an estimated 20 percent of America's landfills. With Zera Food Recycler, families are now able to reduce the food waste that goes to landfills, while also creating sustainable fertilizer for their outdoor lawns and gardens.

EPA recognizes Sodexo for food recovery efforts

The U.S. Environmental Protection Agency (EPA) recently recognized the accomplishments of 13 organizations and businesses participating in EPA's Food Recovery Challenge.

Sodexo was recognized for its leadership in reducing food waste through strategic food recovery efforts and its ability to leverage best practices in support of such efforts at its client sites.

In 2015, more than 800 governments, businesses and organizations participated in EPA's Food Recovery Challenge. Participants include organizations such as grocers, restaurants, educational institutions and sports and entertainment venues, who together kept more than 690,000 tons of food from being wasted. These efforts saved businesses up to \$35 million in avoided waste disposal fees.

Sodexo stood out as a leader reducing food waste because of its innovative and deliberate approach:

•Implementing programs to properly measure waste reduction at client sites with its Global WasteWatch program

•Focus on behavior changes among

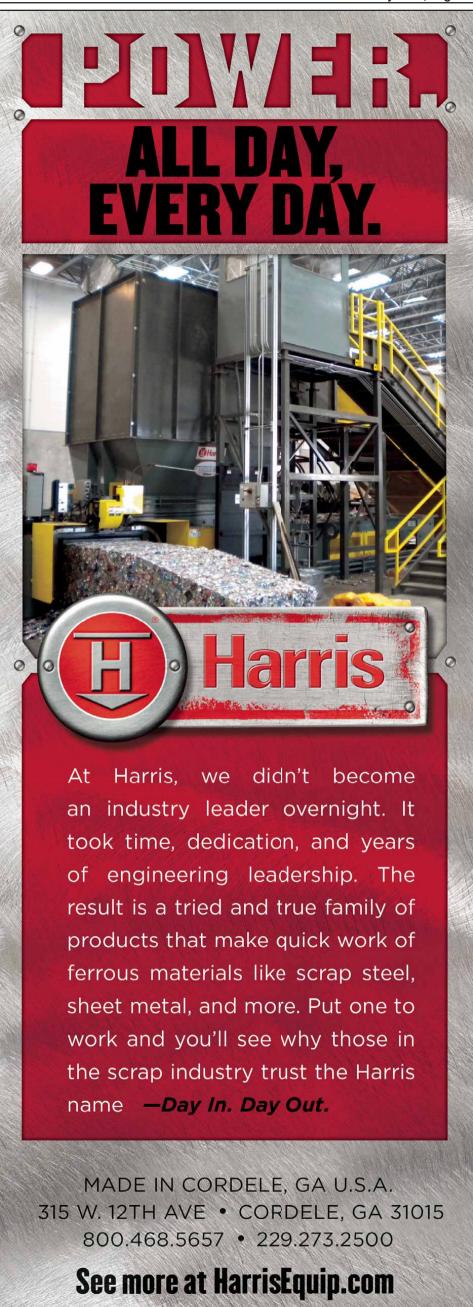
The U.S. Environmental Protection teams to reduce waste before it happens ncy (EPA) recently recognized the and to donate when it is unavoidable

•Host trainings in coordination with the EPA across the country to learn more about waste reduction practices

•Collaboration with organizations to share best practices and leverage programs such as Save the Food

Sodexo has a central role in achieving waste reduction targets and is strengthening its efforts to eliminate food waste at every client site, with a top priority to prevent waste from occurring. Its programs focus on raising awareness first and influencing behaviors of customers and employees, while continuously improving back-of-house processes and upgrading kitchen equipment. Measuring impact and sharing expertise with clients and external industry partners to drive fundamental change on the issue of food waste is seen as equally important.

In the U.S., wasted food carries significant economic and environmental costs. Food accounts for the largest share of the municipal waste stream, with roughly 77 billion pounds discarded each year.



Page A8, February 2017 **American Recycler**

ELECTRONICS

EPA recognizes electronics manufacturers and retailers

economic driver, with supply chains reaching around the world. By designing with the environment in mind and through a lifecycle lens, the product can be made to be more readily repairable and reusable, while toxic materials can be designed out of the product, which extends product life and facilitates recycling.

In the spirit of innovation, the EPA unveiled a new award this year: The Cutting Edge Award. This award promotes bold ideas that have the potential to make a huge impact on the future of sustainable electronics management across a product's full supply chain. It is designed to encourage life cycle thinking while creating ambitious and new ideas that have the potential to be game changers in addressing sustainability in electronics.

Leaders from Best Buy (Gold Tier Award), Dell (Gold Tier), LG Electronics (Gold Tier), Samsung (Gold Tier), Sony (Bronze Tier), Sprint (Gold Tier), Staples (Gold Tier), and VIZIO (Bronze Tier) will gather at CES to celebrate their environmental achievements, which include diverting more than 256,000 tons of used electronics from landfills in 2015 – equivalent to taking 129,000 passenger vehicles off of the

Electronic products are a global road for one year. Of the used electronics collected, almost all (more than 99.9 percent) were sent to third-party-certified recyclers, which helps to ensure that used electronics are handled in a manner that protects human health and the environment.

> EPA is also honoring Dell, Staples and Samsung as the SMM Electronics Challenge Champion Award winners for exemplifying exceptional leadership and innovation in the sustainable management of electronics. These three companies serve as examples in demonstrating significant environmental, social, and economic outcomes for their organizations and the public that go above and beyond the requirements of the SMM Electronics Challenge.

> •Dell received an award for its pioneering use of post-industrial recycled carbon filled polycarbonate in the Latitude E7450 laptop.

> •Staples received an award for its "Make More Happen" initiative, an outreach and public education campaign that has provided information on Staples' Technology Recycling Program to more than 6 million people.

> •Samsung received the inaugural Cutting Edge Award for its cadmiumfree quantum dot ultra-high-definition televisions.

My boss lectured me yesterday, "Don't dress for the job you have, dress for the job you want." But when I turned up at the office today in Ghostbusters gear, the jerk fired me!'



INTERNATIONAL

Call2Recycle contest gathers over 4,000 kg of spent batteries

Call2Recycle Canada, Canada's national consumer battery collection and recycling organization, shared the culmination of two programs that collected 4,118 kg of batteries.

Call2Recycle teamed up with Take Pride Winnipeg to launch a Manitobawide Back-to-School Battery Recycling Contest to inspire school children to keep batteries out of landfills and help protect the environment. The contest challenged schools across the province to collect the most batteries for recycling. The winning school received a grand prize donation of \$1,500 for their school, while 3 additional schools with the best battery recycling displays were rewarded with \$500 donations.

Students from across the province decorated their schools with posters, held battery drives, set-up displays in the lobby using the battery boxes, and most importantly, collected batteries for recycling with the help of their family, friends and neighbors.

Frontenac School in Winnipeg earned the grand prize by collecting 528 kg of batteries. The three runners up, who demonstrated outstanding effort and creative displays, include Treherne Collegiate Institute in Treherne, Gladstone Elementary School in Winnipeg and Dr. F.W.L. Hamilton School in East Saint Paul.

In its 3rd year, the annual Manitoba Waste Ace Library Contest was activated in libraries across the province. This program focuses on informing residents about battery recycling through public education displays. St. Boniface Library, a branch of Winnipeg Public Library, in Winnipeg was awarded a grand prize donation of \$1,500 for their collection of 111 kg of batteries during Waste Reduction Week.

Call2Recycle is also recognizing another outstanding library branch this year: Henderson Library in Winnipeg, a branch of Winnipeg Public Library, was awarded a \$1,500 prize to recognize its impressive and continued effort in battery collection throughout 2016 with a total of 615 kg since the beginning of 2016.

Call2Recycle's contests designed to help educate and empower citizens across Manitoba with the knowledge battery recycling is crucial in order to keep batteries out of landfills where they can potentially harm the environment.

Novelis wins European Aluminum Award for pioneering closed-loop recycling system

Novelis, the global leader in aluminum rolling and recycling, was awarded the European Aluminum Award at the Aluminum 2016 Trade Fair. The award honoring efficient and forwardthinking uses of aluminum was bestowed upon Novelis for its work in automotive aluminum innovation on the REALCAR (Recycled Aluminum Car)

Launched in 2008 by Jaguar Land Rover, the REALCAR program is a multi-stakeholder initiative established to create a closed-loop vehicle production model that recycles automobiles at the end of their lifecycles. Through this dedicated closed loop recycling system, Jaguar Land Rover was able to recover over 50,000 tons of press shop aluminum scrap in 2015.

Novelis also developed the new Novelis AdvanzTM s5754 RC aluminum alloy, designed to absorb higher levels of than ever before, as a key component of the REALCAR project. This new alloy is designed to contain up to 75 percent recycled content while still delivering the strength, durability and formability demanded by automotive engineers. Novelis Advanz s5754 RC was first introduced in the Jaguar XE series and is now featured in all new and legacy Jaguar Land Rover models.

"We are honored to be recognized for our leadership in alloy innovation and aluminum recycling with this prestigious award," said Emilio Braghi, senior vice president, Novelis and president, Novelis Europe.

In addition to the award for automotive innovation, Novelis was also recognized as a finalist for façade construction in anodizing quality utilizing Novelis J57S ® for the L'Orangerie, the corporate headquarters of the mechanical engineering group, Cockerill Mainteprocessed automotive aluminum scrap nance & Ingénierie in Seraing, Belgium.



THE ENVIRO-RACK

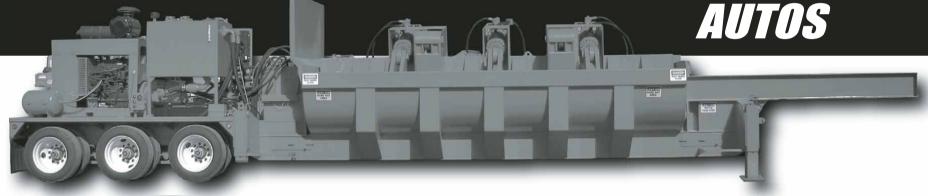
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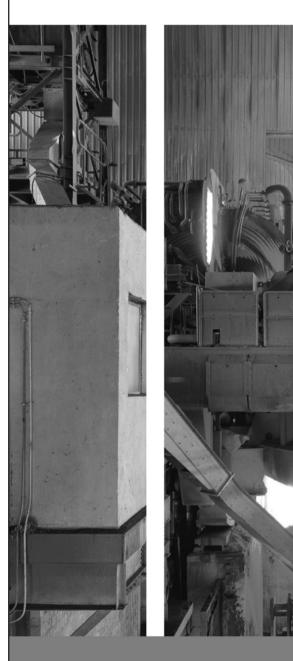
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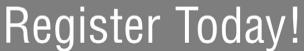
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American Recycler February 2017, Page A11

WASTE

Duke Energy to recycle coal ash at H.F. Lee Plant in Goldsboro

Investment will add to North Carolina county and local economy tax base

ash from four basins at the H.F. Lee Plant in Goldsboro, North Carolina, and safely recycle the valuable material for use in concrete products.

"This is the latest step forward in safely closing coal ash basins and represents a significant investment in the Goldsboro community, which benefits customers and the local economy," said Millie Chalk, government and community relations manager for Wayne County.

Coal ash is a non-hazardous material created when coal is burned to produce electricity. Recycling is the only way to avoid permanent disposal of the material. However, much of the ash stored in basins has too much carbon to be used in concrete products. Duke Energy is making additional investments in technology designed to reprocess coal ash from basins to be used in various concrete products.

This is a change from previously announced plans for the site. In 2015, the company announced plans to excavate and relocate coal ash from the site to a fully lined structural fill in Lee County. The Colon Mine project remains a contingency site if final closure plans for basins across the state require it.

After evaluating a variety of locations, our experts have determined that H.F. Lee is an ideal site for a project of this nature based on a number of factors including, proximity to market demand, the volume of ash at the site, ash quality and the site's current closure deadline.

"The ash currently stored at H.F. Lee is what's left after providing safe and reliable energy to our customers for

Duke Energy plans to excavate coal more than 60 years. This recycling project represents an exciting opportunity to repurpose this material into a valuable product," Chalk said.

> The majority of the six million tons of ash on the property will be safely reprocessed for use in concrete products by the current 2028 closure deadline. Any material left after recycling operations have ended will be relocated to a safe, permanent storage solution off-site. The company does not intend to construct a landfill onsite to store remaining material.

> In 2015, Duke Energy recycled nearly two-thirds of the ash produced across its states. North Carolina's coal ash law encourages even more recycling and requires the company to identify three sites across the state for recycling projects, making 900,000 or more tons of material available each year.

> A recent evaluation conducted by the Electric Power Research Institute (EPRI) confirmed recycling ash for concrete as one of the most practical and proven uses of the material. The study examined well-established uses for ash, commercial beneficiation technologies and innovative technologies.

> More than half of the concrete produced in the U.S. contains coal ash because it makes roads, bridges and buildings stronger and more durable. Some of the world's most iconic and sustainable structures were built using coal ash, including One World Trade Center in New York City. For every ton of coal ash used as a replacement for Portland cement in concrete, approximately 1 ton of greenhouse gas emissions are avoided.

OBC adds Waste Services Division

Ohio Baler Company (OBC) has expanded core competencies with the launch of a new waste division.

OBC Waste will focus on the placement of waste compactors and development of solutions for companies to most efficiently manage their non-recycled waste materials.

Patrick Spear has been hired to lead this new division. As the co-founder of Cleveland-based firm Home Team Marketing, Spear comes with more than 14 years of experience in managing customer relationships, fulfilling sponsorship agreements and executing marketing plans with schools and sports-related governing bodies. His skillset is in alignment with aiding OBC launch and support the new OBC Waste division.

To realign the company around this expansion, Bob Koch has been promoted to sales director for OBC Baling Equipment and OBC Used Equipment and Jim Olszewski will now fulfill the position of director of operations for OBC Rigging Services.

OBC serves customers through consultation and sales of both new and used recycling equipment including balers, shears, foam compressors, wire strippers, waste compactors and more. OBC Rigging offers installation and relocation services for companies looking to move or place large equipment or relocate an entire facility. Koch has been with OBC for 14 years and Olszewski for 5.

The addition of Patrick Spear and promotions of Bob Koch and Jim Olszewski are central to the success of this change.

Texas Universities address hazardous waste violations

The U.S. Environmental Protection sives, narcotics, and toxic chemicals dur-Agency (EPA) recently announced settlements with three Texas universities over hazardous waste violations at university facilities. Under the settlements. Baylor University, Texas A&M University and Texas Christian University all agreed to correct violations and pay a civil penalty. EPA discovered the violations by analyzing data the facilities are required to submit under the Resource Conservation and Recovery Act (RCRA), as well as analysis of additional records that the universities voluntarily provided.

Under RCRA, facilities producing hazardous waste are regulated as smallor large-quantity generators. From 2011 to 2014, while Baylor claimed to be a small quantity generator, at times it generated more hazardous waste than is allowed under this criteria. The reason this is important is that large quantity generators have much more stringent employee training requirements, and need to prepare detailed contingency plans for first responders. Baylor also at times generated hazardous wastes without identifying them as such. In addition to paying a civil penalty of \$11,330, Baylor corrected existing violations and will revise its standard operating procedures to ensure the lab will comply with RCRA. Baylor will also purchase and donate equipment to the Waco Fire Department to aid in identifying exploing emergency responses.

Similar violations were found at Texas Christian University (TCU) facilities in Fort Worth, Texas. TCU improperly operated as a large-quantity generator because it produced more than a kilogram per month of acutely hazardous waste, which are certain wastes that are more toxic in smaller quantities. During these incidents, TCU did not notify the state of Texas as required of large-quantity generators. Also, between 2011 to 2015, TCU did not make adequate or accurate hazardous waste determinations of its waste streams. TCU agreed to correct violations and pay a civil penalty of \$30,591.

EPA discovered violations at four Texas A&M University campuses: Commerce; Kingsville Citrus Center in Weslaco, Texas; Veterinary Medical Diagnostic Laboratory in Amarillo, Texas; and the Geochemical and Environmental Research Group in College Station, Texas. Violations included generating enough hazardous waste to qualify as a large-quantity generator but not registering as one, generating acutely hazardous waste without proper notification, and not filing required paperwork. Under four separate settlements, Texas A&M agreed to correct all violations and pay a combined penalty of \$141,912.



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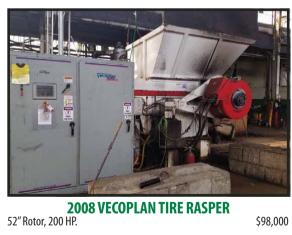
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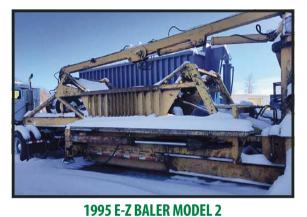
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Page A14, February 2017

American Recycler

METALS

Schnitzer reports auto and metals recycling delivers best first quarter since 2012

Schnitzer Steel Industries, Inc. reported a loss per share from continuing operations of \$0.05 for the fiscal 2017 first quarter ended November 30, 2016 and an adjusted loss per share from continuing operations of \$0.03. Reported and adjusted first quarter results include an adverse impact on operating costs in the Steel Manufacturing Business (SMB) of approximately \$2.5 million, or \$0.09 per share, resulting from outages related to a major equipment upgrade and maintenance downtime. In comparison, the Company had a loss per share from continuing operations of \$0.19 in the prior year first quarter and an adjusted loss per share from continuing operations of \$0.13. For a reconciliation of the adjusted results to U.S. GAAP, please see the Non-GAAP Financial Measures provided after the financial statements in this document.

Auto and metals recycling (AMR) delivered its best first quarter performance since fiscal 2012 primarily due to higher benefits achieved from the successful execution of cost reduction and productivity initiatives and improved market conditions. In the steel manufacturing business (SMB), continued pressure from low-priced imports on finished steel selling prices and volumes, combined with the higher operating costs associated with a major equipment upgrade and maintenance downtime, adversely impacted results as compared to the prior year and the fourth quarter of fiscal 2016.

Schnitzer currently expects AMR's operating income for the second quarter to increase sequentially and year-over-year driven by the continued improvements in market conditions for recycled metals. AMR's second quarter performance is expected to reflect higher ferrous average selling prices and sales volumes and an anticipated favorable impact from average inventory accounting, as well as continued benefits from previously announced cost reduction and productivity initiatives. Schnitzer currently anticipates SMB's second quarter performance to be slightly improved from the first quarter due to higher selling prices, with the elimination of the expenses associated with the equipment upgrade expected to be offset by higher raw material costs and higher inventory costs associated with low production volumes resulting from the downtime.

"In the first quarter, AMR delivered a substantial increase in operating income compared to the prior year quarter, largely due to the increased contributions from the successful implementation of our cost savings and productivity initiatives. In the second quarter, our expectations for improved performance are underpinned by the stronger market environment that we are experiencing as well as continued progress on our strategic initiatives to reduce costs, deliver internally-generated synergies and drive further productivity initiatives," commented Tamara Lundgren, president and chief executive officer.

Import market share at 26 percent in December

Department's most recent Steel Import Monitoring and Analysis (SIMA) data, the American Iron and Steel Institute (AISI) reported that steel import permit applications for the month of December totaled 2,648,000 net tons (NT). This was a 9.6 percent decrease from the 2,930,000 permit tons recorded in November and a 5.6 percent decrease from the November preliminary imports total of 2,804,000 NT. Import permit tonnage for finished steel in December was 2,069,000, down 3.0 percent from the preliminary imports total of 2,132,000 in November. For the full year of 2016 (including December SIMA permits and November preliminary data), total and finished steel imports were 32,969,000 NT and 26,248,000 NT, down 15.0 percent and 16.7 percent, respectively, from the same period in 2015. The estimated finished steel import market share in December was 26 percent and is 26 percent year-to-date (YTD).

Finished steel imports with large increases in December

Based on the Commerce artment's most recent Steel ort Monitoring and Analysis MA) data, the American Iron Steel Institute (AISI) reported steel import permit applicate for the month of December at 40 percent), standard rails (up 164 percent), oil country goods (up 36 percent), tin plate (up 27 percent), line pipe (up 23 percent), sheets and strip galvanized hot dipped (up 14 percent) and sheets and strip all other metallic coatings (up 10 percent). Tin plate (up 15 percent) had a significant increase in 2016 vs. the prior year.

In December, the largest finished steel import permit applications for offshore countries were for South Korea (238,000 NT, down 12 percent from November preliminary), Turkey (175,000 NT, down 4 percent), Japan (133,000 NT, up 34 percent), Taiwan (125,000 NT, up 46 percent) and Germany (85,000 NT, down 2 percent). For full year 2016, the largest offshore suppliers were South Korea (3,780,000 NT, down 22 percent from the same period in 2015), Turkey (2,435,000 NT, down 14 percent) and Japan (1,817,000 NT, down 20 percent).

Here's a fantastic exercise that really helps you to lose weight: Turn your head to the left. Good! Now turn your head to the right. Repeat this exercise whenever you are offered any food.



American Recycler February 2017, Page A15

METALS

New Jersey to remove low level radioactive slag

New Jersey's Department of Environmental Protection (DEP) has approved a plan that requires the removal of approximately 50,000 tons of slag and baghouse dust containing low levels of radioactivity from the Shieldalloy Metallurgical Corp. site in Newfield, Gloucester County.

The decommissioning plan calls for construction of a short rail spur to link with an adjacent freight rail line so that the materials, covering some seven acres of the site in this small borough just north of Vineland, can be taken by train to federally approved disposal sites located out of state.

Shieldalloy produced specialty steel and alloy additives, powdered metals and optical surfacing products at the site for decades before phasing out operations in the late 1990s and early 2000s.

The metals extraction process produced a rocky by-product known as slag and a fine material known as baghouse dust that contain low levels of radioactivity. Both materials have been stored on the eastern side of the site for many years. One of the metal ores used as a raw material contained small, but regulated, amounts of radioactive uranium and thorium.

The storage area contains nearly 38,000 cubic yards (more than 44,000 tons) of slag and more than 15,400 cubic yards (or 7,000 tons) of baghouse dust. A cubic yard is roughly equivalent to the size of a large kitchen refrigerator.

For decades, the materials were stored under a license issued by the federal Nuclear Regulatory Commission (NRC). As it was phasing out operations, Shieldalloy submitted a decommissioning plan to the NRC proposing to cap the materials and leave them on-site in perpetuity.

In 2009, however, New Jersey became an NRC Agreement State, meaning the federal agency granted the state authority to regulate hundreds of NRC-licensed sites and facilities. Shieldalloy initiated court actions challenging the transfer of regulatory oversight of its site to the DEP.

Federal courts twice remanded jurisdiction of the disposal area back to the NRC. But the state persisted and in December 2014, the U.S. Circuit in Washington D.C., gave the DEP regulatory authority over the Shieldalloy license. Since that time, Shieldallov has been working cooperatively toward a decommissioning plan acceptable to the DEP. With the approval of the removal plan, Shieldalloy has 60 days to solicit bids and hire a removal contractor. The work plan detailing the removal process will be due nine months after the award of the bid and will specify facilities where the materials will be shipped. The actual removal of the materials is expected to take several years.

In addition to the radiological cleanup that is under DEP jurisdiction, Shieldalloy and a contractor are working actively with the U.S. Environmental Protection Agency's Superfund program in separate actions to remediate non-radiological contaminants in soil, sediments, and groundwater at the site.

Scrap Metals 2 **MarketWatch** Commodity Zone 1 Zone 2 Zone 3 Zone 4 Zone 5 \$199.00 \$301.00 #1 Bushelings \$202.00 \$200.00 \$275.00 per gross ton 297.00 #1 Bundles per gross ton 201.00 195.00 195.00 261.00 195.00 193.00 199.00 249.00 295.00 Plate and Structural per gross ton #1 & 2 Mixed Steel 195.00 190.00 190.00 230.00 273.00 per gross ton Shredder Bundles (tin) 135.00 154.00 156.00 175.00 215.00 per gross ton 134.00 150.00 152.00 175.00 215.00 Crushed Auto Bodies per gross ton Steel Turnings 93.00 104.00 99.00 118.00 121.00 per gross ton 2.32 2.40 2.36 2.40 2.40 #1 Copper per pound 1.91 2 15 2 25 2 25 2.21 .58 .57 .53 Aluminum Cans .56 .61 Auto Radiators per pound 1.59 1.35 1.49 1.49 1.50

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per pound

per pound

per pound

Aluminum Core Radiators

Heater Cores

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.49

1.05

.46

.47

1.05

.49

1.10

.51

1.20

.54

1.29

The AIST foundation donations help promote steel recycling

The AIST Foundation has received four significant donations that will fund initiatives to promote the steel industry as a viable and rewarding career choice for young engineers. The industry benefactors include: Cliffs Natural Resources (\$60,000), Commercial Metals Company (\$50,000), Hatch Associates Consultants Inc. (\$50,000) and Steel Dynamics Inc. (\$100,000).

Ted Lyon, managing director, Hatch Associates Consultants Inc., said, "The work of the AIST Foundation is a core component of Hatch's workforce and employee development program for young professionals joining the industry. We enthusiastically support the AIST Foundation programs, as they provide a sustainable pipeline of top notch talent."

Glenn Pushis, senior vice president, Long Products Steel Group, Steel Dynamics Inc., said, "Steel Dynamics is proud to support AIST and the AIST Foundation. We appreciate their combined efforts in the missions to advance the technical development, production, processing and application of iron and steel."

The AIST Foundation is a Pennsylvania-based 501(c)(3) non-profit corporation organized for charitable, education and scientific purposes. The Foundation seeks to attract technology-oriented professionals to the steel industry by educating the public about the high-tech, diverse and rewarding nature of careers in modern steelmaking. Each year, the AIST Foundation awards in excess of \$700,000 for scholarships and grants in the fulfillment of its mission to ensure the iron and steel industry of tomorrow will have a significant number of qualified professionals.

November steel shipments down

The American Iron and Steel Institute (AISI) reported that for the month of November 2016, U.S. steel mills shipped 6,724,277 net tons, a 1.6 percent decrease from the 6,832,801 net tons shipped in the previous month, October 2016, and a 4.1 percent increase from the 6,457,870 net tons shipped in November 2015. Shipments year-to-date in 2016 are 79,360,096

net tons, a 0.8 percent decrease from shipments of 79,990,315 net tons in the first eleven months of 2015.

A comparison of November 2016 shipments to the previous month shows the following changes: hot rolled sheet, up 5 percent; hot dipped galvanized sheet and strip, down 6 percent, and cold rolled sheets, down 6 percent.

When a guy says he likes girls with a sense of humor, he doesn't mean he wants a girl to be really witty and funny. He just means he wants her to laugh at his jokes.



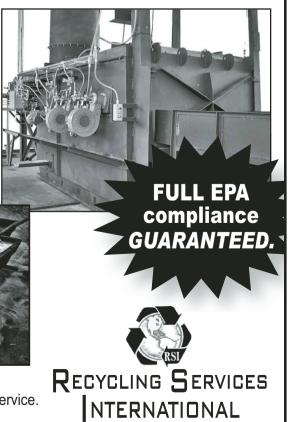
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Page A16, February 2017 **American Recycler**

AUTOMOTIVE

Volkswagen recalls 83,000 vehicles and funds mitigation

In a second partial settlement disclosed by the U.S. Environmental Protection Agency (EPA), the Department of Justice (DOJ), and the State of California, automakers Volkswagen AG, Audi AG, Porsche AG and related entities (collectively referred to as Volkswagen), have agreed to recall 83,000 model year 2009 through 2016 3.0 liter diesel vehicles sold or leased in the U.S. that are alleged to be

emissions tests, in violation of the Clean Air Act and California law.

For the older vehicles, Volkswagen is required to offer to buy back the vehicles or terminate leases, and must also offer an emissions modification to substantially reduce emissions if one is proposed by Volkswagen and approved by regulators. For the newer vehicles, if Volkswagen

equipped with "defeat devices" to cheat demonstrates it can make the vehicles compliant with the certified exhaust emission standards, it will have to fix the vehicles and will not be required to buy the vehicles back. Volkswagen is also required to spend \$225 million to fund projects that will reduce emissions of nitrogen oxide (NOx).

The partial settlement does not resolve any pending claims for civil penalties, nor does it address any potential criminal liability. The settlement also does not resolve any consumer claims, claims by the Federal Trade Commission, or claims by individual owners or lessees who may have asserted claims in the ongoing multidistrict litigation. The state of California has secured a separate resolution for the 3.0 liter violations that addresses issues specific to vehicles and consumers in California.

The affected older vehicles (referred to as generation 1 vehicles) are the 2009 through 2012 Volkswagen Touareg and Audi O7 diesel models. The affected newer vehicles (referred to as "generation 2" vehicles) are the 2013-2016 Volkswagen Touareg diesels, 2013 through 2015 Audi Q7 diesels, 2013 through 2016 Porsche Cayenne diesels, and 2014 through 2016 Audi A6 quattro, A7 quattro, A8, A8L and O5 diesel models.

According to the civil complaint against Volkswagen filed by the Justice Department on behalf of EPA on January 4, 2016, and amended on October 7, 2016, Volkswagen allegedly equipped its 3.0 liter diesel vehicles with illegal software that detects when the car is being tested

for compliance with EPA or California emissions standards and turns on required emissions controls only during that testing process. During normal driving conditions, the software renders these emissions control systems inoperative or reduces their effectiveness, resulting in increased emissions. This is known as a defeat device. By using a defeat device, these cars meet emissions standards in the laboratory, but emit up to nine times or more above the EPA-compliant levels for NOx during normal on-road driving conditions. The Clean Air Act requires manufacturers to certify to EPA that vehicles will meet federal emissions standards. Vehicles with defeat devices cannot be certified.

Because Volkswagen cannot modify the affected 2009 through 2012 Volkswagen Touareg and Audi Q7 generation 1 diesel vehicles to meet EPA- certified exhaust emissions standards, the settlement requires Volkswagen to offer owners of generation 1 vehicles the option to have the company buy back the car and to offer lessees a lease cancellation at no cost. If a plan is proposed by Volkswagen and approved by EPA and CARB to substantially reduce emissions from the generation 1 vehicles, Volkswagen will also have to offer that as an option for consumers.

For the generation 2 vehicles, Volkswagen will recall and fix these vehicles so they meet their certified exhaust emissions standards, after the technical solution is approved by regulators. If after extensive testing the solution does not perform as expected and is not approved,

See VOLKSWAGEN, Page 18

Salvaging Millions

by Ron Sturgeon Autosalvageconsultant.com

Tools for Success: Always Have Positive Dissatisfaction!

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 go to college, so I know you can achieve maximum success, regardless of your education. Visit American-Recycler.com to get the first article or any of the other articles in the series. Each of the articles after the first takes a closer look at one of the tactics.

After I sold my salvage yard to Ford in the late 1990s, I spent some time working with executives in Ford's salvage division, GreenLeaf. At the time, Ford was buying many of the best run auto salvage yards as part of its vision to have cradle-to-grave presence for automobiles. Eventually, Ford divested its salvage division to refocus on its core business of making cars.

Dixon Thayer, I, and one other partner purchased it, restored it to profitability and sold it to a publicly traded company. One of the great blessings of my business life was meeting and working with Dixon Thayer, who became CEO of Green-Leaf after the partnership acquired it.

From him, I learned the value of having positive dissatisfaction. When I first heard Dixon talk about positive dissatisfaction, I may have had a reaction like the one you're having. I thought the words really didn't go together.

Dixon shared with me that positive dissatisfaction was a paradox, a word that describes two concepts that seem contradictory, but may not actually be.

As entrepreneurs, we understand, intuitively, the need for genuine passion. To lead people, to inspire them to do their best work, you must have passion for what you are doing. Your employees have to see how deeply you believe in what you are trying to create. That's the positive part of positive dissatisfaction, the contagious energy that leaders have.

At the same time, an effective business owner has to have a strategic plan and clarity about what he or she is trying to achieve. He or she has to know the numbers, the metrics, and the goals.

You should have a specific goal for every aspect of your business that you are working to improve. You should be looking at your key performance indicators at the start of every month and charting your progress toward that goal.

If you are doing these things, you're dissatisfied about something. Even when you are doing extremely well against the goal, you believe you can do even better. When my yard was growing fast, I remember one sales meeting that I had with my salespeople. Ten of 12 were well above their monthly sales goal, but 2 lagged the pack. Most owners would have been pleased to have more than 80 percent of their sales force at or above quota, but I couldn't help but think how much better we could have done had every salesperson hit their goal.

I'm not going to change. I know that I am more driven than most people. I know that I have a greater sense of urgency than most. Most successful yard owners share these traits. However, I also know that being overly critical of the two salespeople who missed the goal would not have motivated them to push harder. They already knew I was dissatisfied.

Instead, I tried to show them a positive vision of what we could achieve next month. In some cases, you may have a person who just isn't cut out for sales and moving them to something that is a better fit or letting them go is required, but when you have employees who can perform and who want to perform, a little positive dissatisfaction works well.

Try always having positive dissatisfaction and you'll see!

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.





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American Recycler February 2017, Page A17

AUTOMOTIVE

LA attorney files civil lawsuit against catalytic converter theft ring

Los Angeles City Attorney Mike Feuer took aim at two businesses alleged to have been involved in a catalytic converter theft ring. Feuer has filed a civil lawsuit against two Southern California businesses which allegedly repeatedly received or sold stolen catalytic converters and failed to keep proper bookkeeping records to cover the allegedly illicit nature of the fencing operation.

"California has more catalytic converter theft than any state in the nation, a problem that's plagued Los Angeles motorists for far too long," said Feuer. "Today we focus on breaking up the allegedly illegal operations that drive these thefts, and fighting to hold accountable business owners whom we allege don't play by the rules."

In just the last 4 years, LAPD has received more than 4,367 reports of catalytic converters stolen from vehicles, typically resold on the black market. In an effort to curb the growing trend of catalytic converter thefts, the California legislature adopted California Senate Bill 267 in 2009, requiring businesses or individuals who purchase used catalytic converter parts to follow strict record keeping and payment requirements. Unless otherwise exempted, purchasers of catalytic converters are to keep detailed records of the date, name, driver's license number, description of the parts purchased and are prohibited from providing cash payments at the time of

In April, 2015, the LAPD formed the Catalytic Converter Task Force (CCTF) to investigate, identify and target the illicit market for catalytic converters in Los Angeles. The City Attorney's lawsuit alleges that the CCTF identified Gonzalez Brothers LLC, an auto parts recycling business located at 12970 Branford Street in Pacoima and Kinsbursky Brothers Supply Inc., a scrap metal recycler in Anaheim which buys scrap metal and parts from sellers across southern California, for alleged violations.

The lawsuit alleges the operators of Gonzalez Brothers knowingly purchased thousands of stolen catalytic converters off the black market and resold them to other recyclers, including the operators of Kinsbursky Brothers, for profit. The businesses allegedly avoided required recordkeeping and payment obligations in order to facilitate the fencing and laundering of stolen property.

During a 2015 surveillance investigation, CCTF allegedly observed employees with Gonzalez Brothers engage in numerous paperless, cash sales of used catalytic converters, often with known catalytic converter thieves. A subsequent search warrant of the location allegedly recovered tools used to remove catalytic converters, various records and over 300 catalytic converters. None of the records involving catalytic converter sales were alleged to contain the identifying information required by law and investigators did not locate any written agreements with other businesses regarding accepting and recycling converters.

Further investigation by CCTF discovered Kinsbursky Bros. was one of the largest buyers of Gonzalez Brothers, allegedly purchasing more than seven thousand catalytic converters over the course of two and half years. Between August, 2015, and September 18, 2015, alone, Kinsbursky Bros. allegedly purchased 23,822 catalytic converters through 364 transactions from a variety of sellers. The lawsuit alleges that none of the transactions included the legally mandated information that Kinsbursky Bros. was obligated to retain. CCTF Officers also failed to locate, and were not provided, any written agreements between Kinsbursky and any other business regarding accepting and recycling catalytic converters, as required by law.

The lawsuit seeks an injunction against the operators of Gonzalez Brothers and Kinsbursky Bros., prohibiting further illegal activity and enjoining them from operating as a clearing house for stolen converters. The lawsuit also seeks civil penalties up to \$2,500 for each violation.

City Attorney Feuer encourages motorists to use common sense and consider additional measures to protect themselves against potential catalytic converter theft including:

- •Park your vehicle in well-lighted secured areas and near the entrance of businesses.
- •Engrave your license plate number to the converter to make it traceable.
- •Visit a muffler shop to have converter secured to the vehicle's frame.
- •Look into different types of catalytic converter theft deterrent systems at your local auto parts store or online.

The litigation is being handled by Deputy City Attorneys Travis Austin and Jaclyn Blankenship.

A father bought a lie detector that makes a loud beep whenever somebody lies around it. His son came home that afternoon. Father asked him, "So, you were at school today, right?"

Son: "Yeah."

Detector: "Beep."

Son: "Okay, okay, I was at the son!"
movies."

Det

Detector: "Beep."

Son: "Alright! I went for a beer with my friends."

Father: "What?! At your age, I never touched alcohol!"

Detector: "Beep."

Mother laughed: "Well, he IS your son!"

Detector: "Beep."







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American Recycler

AUTOMOTIVE

Steel advocates recognized at auto show

SMDI honors steel innovators with 3rd annual Men and Women of Steel awards

At the 2017 North American International Auto Show held in Detroit, the Steel Market Development Institute (SMDI), a business unit of the American Iron and Steel Institute (AISI), presented the annual "Men and Women of Steel" awards to two distinguished honorees who are championing the use of advanced high-strength steel (AHSS).

The Industry Innovator Award was presented to Gregory Warden, executive director and global functional leader, body, exterior and dimensional engineering at General Motors (GM). The award acknowledges automotive designers or engineers who showcase superior innovation in their use of AHSS. Warden's team is leading in the application and advancement of AHSS and General Motors' ongoing use of steel in their vehicles exemplifies this. Thanks to companies like

GM, who fully exploit the properties and value of steel, the growth of AHSS has exceeded expectations.

The Community Hero Award recognizes individuals and organizations whose work using steel impacts the quality of life of the community. The 2017 recipient is Steve Marks, industry technical support manager at Inter-Industry Conference on Auto Collision Repair (I-CAR). His work includes conducting research on collision repair, OEM contract training and development and is a lead instructor for certification programs. Marks educates the next generation of technicians about the repair processes for steel, which have been widely taught for many years. As steel is reinvented and new grades are produced, Marks aids in the redevelopment of the repair process making sure it is as advanced as the new steels.

Safelite AutoGlass reaches windshield recycling milestone

For the 5th year running, Safelite AutoGlass® will save more windshields from the landfill than any other glass company in the country, thanks to its sophisticated recycling program.

The company, which is the nation's largest provider of windshield replacements, has sent 1.76 million windshields to be recycled this year, surpassing the total amount in 2015.

Safelite is the only vehicle glass company with a wide-scale windshield recycling program. Windshields are not commonly recycled because they are made from laminated glass, which is created using two sheets of glass with a clear resin interlay called Polyvinyl Butyral (PVB) between. It is the resin interlay that keeps the glass together when damaged, but it is also difficult to separate the glass and inner plastic layers and re-purpose the PVB. Additionally, the logistics of returning windshields to a recycling plant are challenging.

However, in 2012, Safelite AutoGlass implemented its windshield recycling program thanks to a partnership with Shark Glass Recycling North America.

With Shark's patented technology, the laminated glass from Safelite's customers is processed through the crusher, which separates the glass from PVB. Approximately 90 percent becomes glass cullet, which can then be recycled into a number of new products, while approximately 7 percent becomes scrap, which is reprocessed into pellets and recycled into a number of new products, such as carpet backing, paint and primer, and other plastic products. In fact, Safelite uses rugs made with the recycled carpet backing with the company logo in many of its locations.

The logistics of collecting the damaged windshields and shipping to the recycling plant were designed to be carbon neutral, using existing freight lanes within the supply chain returning to Safelite's east coast distribution center.

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Analysis supports leaving carbon pollution standards in place through 2025

Based on extensive technical analysis that shows automakers are well positioned to meet greenhouse gas (GHG) emissions standards for model years 2022-2025, U.S. Environmental Protection Agency (EPA) administrator Gina McCarthy proposed leaving the standards in place, so the program that was established in 2012 will stay on track to nearly double fuel economy, dramatically cut carbon pollution, maintain regulatory certainty for a global industry, and save American drivers billions of dollars at the pump.

"Given the auto industry's importance to American jobs and communities and the industry's need for certainty well into the future, EPA has reanalyzed these clean car standards and sought further input," said EPA administrator Gina McCarthy. "It's clear from the extensive technical record that this program will remain affordable and effective. This proposed decision reconfirms our confidence in the auto industry's capacity to drive innovation and strengthen the American economy while saving drivers money at the pump and safeguarding our health, climate and environment."

The proposed determination is based on years of technical work, including an exhaustive technical report released earlier this year, and the agency's thorough review and consideration of comments received on that report. This extensive body of analysis shows that manufacturers can meet the standards at similar or even a lower cost than what was anticipated in the 2012 rulemaking, and that the standards will deliver significant fuel savings for American consumers, as well

as benefits to public health and welfare from reducing the pollution that contributes to climate change. Full implementation of the standards will cut about 6 billion metric tons of GHG emissions over the lifetimes of the vehicles sold in model years 2012-2025. Cars and light trucks are the largest source of GHG emissions in the U.S. transportation sector.

Although EPA's technical analysis indicates that the standards could be strengthened for model years 2022-2025, proposing to leave the current standards in place provides greater certainty to the auto industry for product planning and engineering. This will enable long-term planning in the auto industry, while also benefiting consumers and the environment.

Auto manufacturers are innovating and adopting fuel economy technologies at unprecedented rates. Car makers have developed more technologies to reduce GHG emissions, and these technologies are entering the fleet faster than expected. These technologies include gasoline direct injection, more sophisticated transmissions, and stop-start systems that reduce idling fuel consumption.

At the end of 2015, all large automakers were in compliance with the standards. In fact, automakers on average out-performed the model year 2015 standards by seven grams per mile. These gains are happening at a time when the car industry is thriving, and domestic vehicle sales have increased for six consecutive years, while maintaining consumer choice across a full range of vehicle sizes and types.

Volkswagen

■Continued from Page 16

Volkswagen must offer to buy back the vehicles. In that case, the company can also seek approval of an emissions modification plan to substantially reduce emissions and, if approved, can offer that as an additional option for generation 2 vehicles.

Under the terms of the settlement, Volkswagen must achieve an overall recall rate of at least 85 percent for each of the generation 1 and generation 2 vehicles recall programs or pay additional sums into the mitigation trust fund. The buyback and lease termination program for generation 1 vehicles will begin within 30 days following court approval of the settlement. Vehicle modifications will become available to eligible owners and lessees once the modifications are approved by regulators

Vehicle owners and lessees will receive updated information from Volkswagen, Audi, and Porsche concerning their available buyback or modification options after this settlement is approved by the court, and can also obtain information about these options at: www.VWCourtSet lement.com and www.AudiCourtSettle ment.com.

The settlement requires Volkswagen to pay \$225 million to fund projects across the country that will reduce emissions of NOx where the 3.0 liter vehicles were, are or will be operated. This funding is intended to fully mitigate the past and future NOx emissions from the 3.0 liter vehicles. That money will be placed in the same mitigation trust to be established under the partial settlement for the 2L vehicles. This \$225 million is in addition to the \$2.7 billion that Volkswagen is required to pay into that trust under the prior settlement. The mitigation trust will be administered by an independent trustee. Beneficiaries, which may include states, Puerto Rico, the District of Columbia, and Indian tribes, may obtain funds for designated NOx reduction projects upon application to the trustee.

The provisions of the settlement are contained in a proposed consent decree filed in the U.S. District Court for the Northern District of California, as part of the ongoing multi-district litigation, and will be subject to public comment.

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ALTERNATIVE ENERGY

Massachusetts school has solar canopy installed

Upper Cape Cod Regional Technical High School (UCT), a public vocational-technical high school in Bourne, Massachusetts partnered with Solect Energy of Hopkinton, Massachusetts and Green Seal Environmental to develop and install a 663 kilowatt (kW) solar canopy in the school's existing parking lot. In addition to powering the school, the Bourne Rec Authority will also be drawing power from the solar array, which will provide meaningful savings over their current costs. The array became a reality thanks to a 20 year Power Purchase Agreement (PPA) with Solect Energy.

UCT has 725 students with 13 areas of vocational study. The school offers traditional vocational programs in the areas of plumbing, electrical, carpentry, health careers, information technology, marine services, automotive technology, collision repair and cosmetology. As well expanding their technical program offerings in the areas of engineering technology, environmental science and horticulture/landscape contracting. The newly constructed solar canopy will not only increase the school's current sustainability efforts, but also enhance its curriculum by showcasing renewable technology in a live setting to the students and staff.

The school has an Environmental Science & Technology technical program in place, which is a curriculum centered on protecting the environment through the use of science, engineering, conservation, communication and economics. With the newly installed solar canopy, UCT will be able to integrate the array into the science program and directly enhance its students' learning experience with renewable technology.

Upper Cape Cod Regional Tech worked with Green Seal Environmental to develop, design and permit the array, in collaboration with Solect who financed and constructed the system through a PPA, Solect owns and operates the solar array, and sells the power generated back to UCT at a reduced, fixed



rate for the duration of the agreement. The entire project was completed and commissioned at zero cost to UCT and the clean energy provided to them and the Bourne Rec Authority will reduce their current energy costs.

Covanta Tulsa celebrates 30 years of service in Oklahoma

Covanta Tulsa, the energy-from-waste facility which serves the City of Tulsa, neighboring communities and local businesses with a sustainable alternative to landfills is celebrating 30 years of reliable operations. Since 1986, the facility has processed approximately 9 million tons of waste, saving more than 75 acres of land from being developed into landfills and has generated the equivalent of 4 million megawatt hours of electricity, enough to supply the needs of over 12,000 homes every year.

"Thirty years ago, the City of Tulsa faced a dual challenge: finding a disposal location for the citizens' trash and a means to manage volatile natural gas prices during the era of deregulation," stated U.S. Senator Jim Inhofe. "Energy-from-Waste solved both of these challenges. Walter B. Hall, and many others, had a vision for Tulsa and Covanta Tulsa continues to fulfill that vision. The facility is providing a zero landfill alternative which helps this community and Northeast Oklahoma with economic development opportunities and overall resiliency."

Located in West Tulsa, the Covanta Tulsa Renewable Energy facility processes 1,125 tons per day of municipal solid waste, generating up to 265,000 pounds per hour of steam. A portion of the steam powers a turbine and in turn, generates clean, renewable energy that is sold to the Public Service Company of Oklahoma.

> "From now on, I want you to know that I am the man of this house, and my word is law! I expect a sumptuous meal and afterward you're going to draw me my bath so I can relax. When I'm finished, guess who's going to dress me and comb my hair?"

"The funeral director," said his wife.

The remaining steam is exported to Holly Frontier, Inc., a neighboring refinery, offsetting the refinery's need to use fossil fuels to supply its energy needs. The facility is also a large recycler of metal recovering 168,000 tons of ferrous metal

over the past 30 years.

To commemorate 30 years of sustainable operations, Covanta Tulsa has partnered with non-profit Up With Trees and plans to donate 30 trees to Eugene Field Elementary School over the next several years. Covanta Tulsa donated an initial 23 food bearing trees to the nearby school earlier this year, allowing all 23 classes to participate first-hand in the planting and caring for the trees.

In 2012, Covanta Tulsa received the Henry Bellmon Sustainability Award, a statewide award in Oklahoma that recognizes organizations that are dedicated to a balanced approach toward quality of life for all, responsible economic growth and environmental stewardship. The facility also provides local communities with safe destruction of unwanted pharmaceuticals through its Rx4Safety program, which helps deter prescription drug abuse and protects waterways and drinking water from pollution. To date, more than 125,000 pounds of medication have been destroyed by Covanta Tulsa through a partnership with the Oklahoma Bureau of Narcotics.

West Texas wind project developed

Tri Global Energy, a leading U.S. Fluvanna, Texas, Fluvanna Wind Energy is originator and developer of utility-scale wind energy projects, disclosed the initial phase of 155 MW for the Fluvanna Wind Energy project has reached financial close, received funding and begun pouring foundations under the construction contract.

Comprised of 32,000 leased acres of privately owned farm and ranch land in

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The measured wind speeds, transmission access and local support of the Fluvanna Wind Energy project are among the best in the world, according to Tri Global Energy.



A mild mannered man was tired of being bossed around by his wife so he went to a psychiatrist.

The psychiatrist gave him a book on assertiveness, which he read on the way

The man stormed into the house and pointing a finger in her face, said, Page A20, February 2017

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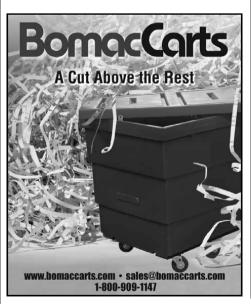
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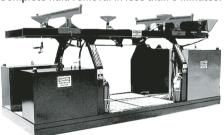
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American Recycler Page A22, February 2017

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Brokk Inc. 1144 Village Way Monroe, WA 98272 800-621-7856 www.brokkinc.com

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Kolberg-Pioneer, Inc. 700 West 21st Street Yankton, SD 57078 800-542-9311 www.kpijci.com

KOLBERG-PIONEER RELEASES NEW 3365 PIONEER JAW CRUSHER

Kolberg-Pioneer, Inc. expanded its jaw crusher product line with the new 3365 Pioneer Jaw Crusher. The innovative shaft and bearing assembly increases serviceability and reduces maintenance and rebuild cost. The electric motor mount, v-belt drive and guarding are all integrated, providing an easy-to-install compact package for mobile or stationary applications.

The crusher has up to 20 percent more capacity than the next size in its width class in both hard rock and recycled applications. It has an automatic adjust and offers replaceable jaw die seats, barrel protector plate, as well as an aggressive 1.5 inch stroke.



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In conjunction with another Lindner novelty, the wet LINDNER washTech GmbH shredder Micromat WS, this machine marks the rise of a new generation of plastic washing equipment of more compact design and superior economic efficiency.



Navistar, Inc. 2701 Navistar Drive Lisle, IL 60532 331-332-3181

INTERNATIONAL TRUCK LAUNCHES NEW CLASS 8 LT SERIES TRACTOR

In developing the LT Series, International worked hard to assure comfort for the drivers.

The redesigned interior features a new premium gauge cluster with a digital driver display that places everything within comfortable reach, while offering drivers real-time monitoring of fuel economy and other important alerts in clear sight. This series also offers dramatically improved aerodynamics and provides fuel efficiency that is 7 percent better than the company's most recent fuel economy leader.

The company is taking orders now and will begin production in late November.

www.internationaltrucks.com



Rayco Manufacturing OH 44691

800-392-2686 www.raycomfg.com

RAYCO OFFERS PLANAR TOOTH FOR PREDATOR MULCHER HEADS

Rayco announces a new planar tooth for its Predator mulcher heads that utilize a 2-bolt tooth holder. Rayco's 2-bolt mulcher teeth are 2-sided, to provide twice the useful life of competitive teeth.

The new planar teeth can be used on the entire rotor. or mixed in with Rayco's carbide-tipped Beaver tooth. Planar teeth are now the same weight as the carbidetipped Beaver teeth, allowing operators to run with a combination of teeth on the rotor simultaneously. Made 4255 E Lincoln Way Wooster, of high strength steel, they cleanly slice through wood and vegetation. The result is a finely mulched product in one pass, reducing the need for back-dragging.

BUSINESS BRIEFS

Bunting Magnetics acquires Master Magnets

■ Bunting Magnetics Co., a leader in magnet and magnetic equipment design, manufacturing and distribution, has signed an agreement to acquire Master Magnets Ltd, a UK-based manufacturer of magnetic separation equipment.

Based in Redditch, United Kingdom, Master Magnets Ltd provides a complete line of magnetic separation, recycling and metal detection equipment to several industries worldwide through a worldwide network of distributors. The acquisition will build on and complement Bunting Magnetics Co.'s global foundation already in place through broadened customer reach, new manufacturing capabilities and the opportunity to sell into new markets.

Simon Ayling, managing director of Bunting Magnetics Europe, will assume operations management responsibility of this new division.

Master Magnets Ltd was founded in 1978 and currently has 26 employees. The company designs, manufacturers and services a complete line of industrial magnetic separation equipment including eddy current separators, permanent and electro magnets, including overband magnets, drum magnets and suspension magnets. The company also supplies a full range of mineral separation equipment for customers all around the world. The company will continue to operate out of its Redditch, UK headquarters.

Terms of the transaction were not disclosed.

Green appointed as VP of human resources

■ Tingue, Brown & Co., Saddle Brook, New Jersey, has named Douglas Green, Esq., vice president of human

Bringing a proven track record for leadership in building human resources departments that are committed to employee growth, support and success, Green is responsible for all facets of human resources management at the company including its laundry product supply company, Tingue, operating in North America and Hong Kong; at its recycling cart manufacturer, MODRoto; and at its consulting firm, TBR Associates.

A former employment attorney for the U.S. House of Representatives, Green recently served as vice president of human resources at Guaranteed Rate, a \$500 million lending firm with 2,300 employees in 38 states, and at The Merchandise Mart, with 600 employees in 8 cities across the U.S. and Canada.

At Tingue, Green is to spearhead the integration of various human resources departments at the company's six facilities in North America into a coordinated team advancing a unified strategy with a consistent approach from one facility to the next, according to David Tingue, chief executive officer of the family owned company founded in 1902.

Aqua Metals nominates Mark Stevenson to board

■ Aqua Metals disclosed that Mark Stevenson has been nominated to join its board. Stevenson is a seasoned industry veteran who can bring a wealth of experience to the company. He has worked throughout the industry, from lead mining to energy storage to lead-acid battery recycling. Stevenson is expected to be able to provide invaluable insight to the Aqua Metals executive team on industry concerns and trends.

Stevenson is currently the technical director at Global Lead Technologies and non-executive director at Metallic Waste Solutions. He is also the chairman of Asia Battery Conference and the International Secondary Lead Conference. Stevenson has been a strong industry leader throughout his lifelong career in the battery recycling and manufacturing industries. He has helped lead, shape and facilitate conversation and innovation through his work leading Asian lead and battery conferences.

Lakeshore acquires **K. Hoving Companies**

■ Lakeshore Recycling Systems (LRS), an independent recycling and waste diversion services provider, has acquired K. Hoving Companies, a full service waste management, recycling and dumpster rental company based in West Chicago, Illinois. As a result of the acquisition, LRS is now Illinois' largest private waste company and expands its system wide services to include street sweeping and portable restrooms as part of a new Temporary Services Division. Financial terms were not disclosed and the acquisition is effective immediately.

K. Hoving Companies has built a strong reputation as a full service waste and recycling company offering services in dumpster rental, roll-off, commercial, construction recycling, portable restrooms and street sweeping in DuPage County and throughout greater Chicagoland. Moreover, K. Hoving Companies operates the only recycling facility in Chicago that is nationally certified by the Recycling Certification Institute.

K. Hoving Companies founding executives, Ken Hoving and KJ Loerop will lead the newly formed LRS Temporary Services Division with Loerop serving as the division's new vice president. The Temporary Services Division will serve individuals and companies seeking roll-off services, portable toilets, on-site storage and street or job site sweeping.

With the addition of K. Hoving Companies, LRS now operates seven material recovery facilities throughout the Midwest, increasing annual revenues to nearly \$170 million and its workforce to over 720 full time employees. The combined companies will now control nearly 20 percent of Chicagoland rolloff market and will be the second largest portable toilet business in Illinois. The acquisition increases the amount of inbound waste under its control to nearly 2.2 million tons per year.

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BUSINESS BRIEFS

Ely Enterprises appointed as new Harris Distributor

Ely Enterprises Inc. has been appointed by Harris Equipment to be their distributor in Ohio, Western New York, Western Pennsylvania, Southern Michigan and Northern Kentucky. They will offer the Harris/IPS line of equipment, along with factory parts and service.

Before a brief hiatus, Ely was a Harris dealer for 18 years and has now rejoined the ranks. President and founder Ken Ely Jr. stated, "We are very pleased to be rejoining the Harris team after more than a decade of separation. The change in leadership and culture within Harris is both refreshing and exciting. We look forward to providing Harris customers the service and support that they have been lacking for so long. We are prepared for the challenge and look forward to the opportunity."

Autocar Trucks adds two leaders to sale force

Autocar Trucks has added two senior leaders to support its customers in vocational markets.

Stan Mikalonis joins Autocar as senior vice president, business and market development, and will focus on supporting Autocar's customers in the refuse and recycling markets. Mikalonis brings over 25 years' experience working with national and regional truck fleets.

In addition to his professional experience, Mikalonis brings an extensive academic record, including an undergraduate business degree from the University of Central Florida and a Ph.D. in Organizational Management from Capella University.

Also joining Autocar is Chris Petrillo, as director of sales for concrete pump and conveyor chassis. Petrillo brings his unique experience spanning the concrete industry, starting with his first role in his family's concrete mixer business. From there Petrillo advanced to leadership positions with many of the major concrete equipment companies such as Putzmeister, McNeilus and most recently, Liebherr Concrete Technology.

Petrillo is a Marketing Graduate of the University of Notre Dame and earned his MBA in Entrepreneurship and Marketing from DePaul University.



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Advanced Technology receives WBE award

Advanced Technology Recycling, a nationwide company specializing in electronic asset disposition serving commercial business and government agencies, has received official certification as a New York State Woman Business Enterprise.

The awarding agency is New York State Division of Women's Business Development.

US Ecology declares quarterly dividend

US Ecology, Inc. declared that stockholders of record on January 20, 2017 received a quarterly cash dividend of \$0.18 per common share, payable on January 27, 2017. The company currently has 21.7 million shares outstanding and estimates that approximately \$3.9 million in cash will be paid out for the declared quarterly dividend.

Eldan Recycling expands tire recycling plant

■ Eldan Recycling A/S successfully installed and started up an expansion of an Eldan tire recycling plant at Italian customer GATIM.

The expansion involves an additional granulator and classifier as well as a tumble back feeder upstream from the existing Rasper. Eldan delivers both turnkey systems as well as single machines.



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FOCUS on PLASTICS/PAPER

SECTION B www.AMERICANRECYCLER.com FEBRUARY 2017

Paper and plastic recycling holding steady

by MAURA KELLER

mkeller@americanrecycler.com

Here's one thing we know: The paper and plastic recycling industries are in a constant state of flux. In a recent report by the American Forest and Paper Association, the U.S. paper recovery rate increased by 1.4 percentage points in 2015 to a record-high 66.8 percent. The previous high point of 66.4 percent was recorded in 2011. However, plastic bottle recycling held nearly steady in 2015, with a slight decrease of 0.5 percent from 2014, according to figures released by the Association of Plastic Recyclers (APR) and the American Chemistry Council (ACC). The 26th annual National Postconsumer Plastic Bottle Recycling Report indicates the overall recycling rate for plastic bottles for 2015 was 31.1 percent, down slightly from 31.7 percent the previous

In 2016, CalRecycle, also known as California Department of Resources Recycling and Recovery, began developing regulations to implement the tracking of recyclables in California. This new state law requires the Department to collect information from recyand composting operations and facilities on the types and quantities of materials that are sold, transferred, disposed or exported. Once implemented, this program will dramatically improve Cal-Recycle's ability to understand the movement of recyclable materials within and through California.

California's initiative to monitor and track paper and plastic recycling trends is not an anomaly. Based on surveys performed by CalRecycle, at least 39 other states plus the District of Columbia currently require some level of reporting information on recycling in their state or jurisdiction. Each state manages their system differently. Some states, such as Oregon, have mandatory reporting requirements from municipalities, facilities, businesses, and haulers that handle post-consumer recyclables. Other states, such as South Dakota, rely on voluntary surveys from businesses and municipalities. States have also

adopted mixtures of mandatory and voluntary reporting requirements.

According to Ted Davis, vice president, Federal Equipment Company, heavily populated areas seem to have higher recycling rates. In these areas, higher populations contribute to better recycling efforts and more efficient collection practices.

"Our main focus in the recycling industry is the plastics segment," Davis said. "The sorting of plastic materials is typically done at some intermediary facility where materials are sorted by the type of plastics, like PE, PP, PET, etc."

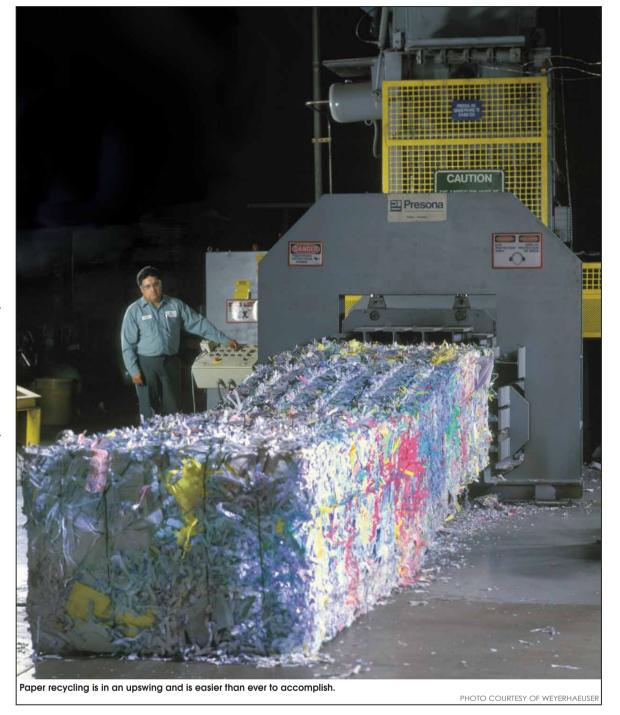
Within the plastics segment, Martin Vogt, owner and president of Environmentally Friendly Solutions Plastics, a joint venture of Inteplast Group, a manufacturer of plastics, said the recycling rate of plastics was up until mid-2016.

"Low prime resin pricing is definitely putting a strangle on this industry," Vogt said. "The rate of recycling depends on the policies and system in place and varies throughout the country but pricing and margins are very low. And finding new end markets are very difficult since manufacturers don't see such a big price advantage anymore and show low interest in using PCR resins."

The APR suggested that following 25 consecutive years of growth, several factors contributed to the recent plateau in plastics recycling, including a drop in material collected available for recycling, reduced exports and increased contamination of recyclables. In addition, use of plastic bottles in packaging applications continued to expand but was offset by lightweighting and increased use of concentrates with smaller, lighter bottles.

Samantha Longshore, sustainability advisor at Transwestern, said the East and West coasts of U.S. tend to have the highest recycling rates, which we can attribute to well established infrastructure and subsequently, better recycling habits of occupants within their buildings.

"We have seen a trend in certain areas of an increase in the types of plastics accepted for recycling," Longshore said.



"Numbered plastics and their varying ability to be recycled can serve as a hurdle in ensuring high recycling rates. As municipalities begin accepting more plastic types, this could eliminate some of the confusion and encourage greater recycling of plastics."

In the world of paper recycling, the trend also is heading in the right direction. According to Paul Kaufmann, founder of Shred Spot in Northbrook, Illinois, it is easier to recycle paper and pricing is on an upswing.

"The top of the upswing is at \$170 per ton in our area. In 2011, the sorted office paper (SOP) went as high as \$290 per ton, but dropped quickly and has mostly been in the \$120 to \$150 ton range," Kaufmann aid. "The market for our paper is doing pretty well as

we don't have an issue finding a mill to buy it. On the occasion that we take in plastic, that is more difficult. Baled stretch wrap is not too bad but baled hard plastic is very difficult for us to sell, especially in smaller quantities."

So has single stream recycling helped or hurt the paper and plastic recycling industry segments? From Davis' perspective, single stream recycling has certainly helped increase quality of the end recycled materials as well as helped reduce the cost of recycling materials as the material now arrives at the plastic recycler's facility.

"This reduces handling and labor costs tremendously," Davis said. "While paper is often collected and comingled with certain plastic recycling material feed streams, by the time the materials to be recycled have reached our customers, most have already been sorted."

Longshore stressed that allowing sorting to occur off site and taking the responsibility away from the consumer is one less roadblock. "Food waste is likely to contaminate some of these materials," Longshore said. "I believe there's a form of offset experienced from ensuring that recyclable materials are sorted at recycling facilities rather than placed directly into a trash-specific container without the chance for recycling."

On the other hand, Vogt said single stream has hurt processors, since the material is more contaminated.

"Glass and paper – especially on wet days and in the See PAPER/PLASTIC, Page B7

Video highlights job creation through bottle recycling

The Carolinas Plastics Recycling director, Recycling Market Develop-Council (CPRC) and the National Association for PET Container Resources (NAPCOR) released a jointly produced "Your Bottles Means Jobs (YBMJ)" video. The focused, 2 minute video tallies the 3,500 jobs in plastic bottle recycling and related fields in the Carolinas, including bottle sorting, recycled material processing, and manufacturing of recycled-content products such as polyester fiber made from recycled PET bottles.

"We are pleased to promote recycled plastics processing and manufacturing jobs in North and South Carolina, and to see recent investment by industries that facilitate or use recycled plastic material feedstock to create and sustain jobs," said Chantal Fryer, ment for the South Carolina Department of Commerce. "The 'YBMJ' video shows us how these jobs add up, and is part of an ongoing YBMJ campaign to encourage everyone to recycle just two more bottles each week in support of local jobs. Although our video is Carolinas focused, our message of local collection supporting local economies, job creation and infrastructure is relevant across the U.S."

To produce the video, CPRC partnered with NAPCOR, the trade association for the #1 polyethylene terephthalate (PET) packaging industry. "The video walks us through a straightforward explanation of how PET recycling works, and shows where jobs are created in the process," said NAPCOR executive director Rick includes promoting plastic recycling Moore. "We hope people will share it broadly and spread the word that recycling plastic bottles creates domestic jobs, generates tax revenues, supports 'green' manufacturing, and creates other economic benefits.

The avoidance of other costs can be one of these benefits. "In addition to job creation and strengthening our domestic economy through increasing plastic bottle recycling, local governments and taxpayers also win through reduction in waste disposal costs of those bottles," said Blair Pollock, Orange County North Carolina solid waste planner.

The Your Bottle Means Jobs campaign is a project of the Carolinas Plastics Recycling Council whose mission companies operating within the Carolinas. Recent investments in new or upgraded plastics recycling-related facilities in the Carolinas include plastics recycling technology provider American Starlinger-Sahm's new headquarters location in Fountain Inn, South Carolina; Sun Fibers' recycled polyester fiber production facilities in Chester and Chesterfield counties, South Carolina; and Unifi's PET bottle processing plant in Reidsville, North Carolina.

The new video is the latest addition to the ongoing CPRC campaign to increase plastic bottle recycling in the two states. "The next time you're holding that bottle, be sure to throw it in the recycling bin, not the trash," said Fryer.



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U.S. EPA requires plastic manufacturer to protect river from pollution

Valencia company will recycle plastic, reducing purchases by 270 tons per year

The U.S. Environmental Protection Agency has reached an agreement with Canyon Plastics, Inc. to resolve federal Clean Water Act violations. The company has corrected the deficiencies found at its facility in Valencia, California, and obtained a stormwater permit. In addition to paying a \$19,000 penalty, Canyon Plastics has committed to install new recycling equipment at a cost of \$292,000.

Canyon Plastics, located at 28455 Livingston Avenue, uses large quantities of small plastic pellets, known as "nurdles," as raw material to manufacture plastic products. During a September 2015 inspection, EPA found the facility did not have a permit to discharge industrial stormwater and had not implemented practices to reduce the discharge of pollutants to local waterways. The inspectors found leaked or spilled nurdles throughout the facility's waste management area and loading docks, and a lack of containment systems such as mesh screens within storm drain inlets. These deficiencies likely resulted in nurdles polluting Halsey Canyon Creek, a tributary to the Santa Clara River.

Nurdles are plastic beads about 1/5 of an inch in diameter. They are widely used in manufacturing and contribute to flakes or powders.

the growing problem of plastic debris in the nation's inland and coastal waters. Once nurdles wash into storm drains and out to open water, they can be eaten by fish, birds and other wildlife. Ingested plastic can displace food in the animals' stomach, and may lead to starvation. In the marine environment, plastic debris has been found to absorb persistent, toxic chemicals that are harmful to humans and have been shown to travel up the food chain.

As part of the settlement, Canyon Plastics will spend \$292,000 to purchase and install new equipment that will recycle plastic scraps generated at its facility and use them as raw material for some of its product lines. The new reuse system will reduce the purchase of new plastic by an estimated 270 tons

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

International Paper declares dividend

International Paper declared a common stock, par value \$1.00. quarterly dividend of \$.4625 per share for the period from January 1, 2017 to March 31, 2017 inclusive on its close of business on February 15, 2017.

This dividend is payable on March 15, 2017 to holders of record at the

A man yelled frantically into the phone, "My wife is pregnant, and her contractions are only two minutes apart!" "Is this her first child?" the doctor asked. "No, you idiot!" the man shouted. "This is her husband!"

Free agricultural film recycling made available

The Arkansas based company, Revolution Plastics began it first dumpster dispersal in Minnesota. A new recycling program will collect, at no cost to farmers, certain types of used agricultural film plastics which have come into widespread use to protect and store silage, haylage and other livestock feeds. The program also allows for the collection of boat wrap and horticultural film plastics.

The proliferation of these plastics has become a significant problem for farmers, recycling facilities and landfills alike due to the size and contamination levels in the plastics. A core group of central Minnesota counties, the Recycling Association of Minnesota and their partners have been working with companies like Revolution Plastics to bring sustainable, economical solutions to farmers all across Minnesota.

This marks a big step forward for recycling agricultural plastics in Minnesota and a huge step forward for Winona County with the first ever free, on-farm collection program. Farmers lined up with their trucks and flatbeds to pick up the 134 white dumpsters that Revolution Plastics and Winona County had staged at an old landfill site in Winona County.

Revolution Plastics had specialized equipment on site with which to load the 134 dumpsters onto the waiting farm vehicles and trailers.

The dispersal of recycling dumpsters by Revolution Plastics is part of the larger Recycling and Sustainable Management of Agricultural/Marine Plastics Project underway now in Minnesota, led by the Recycling Association of Minnesota and a group of central Minnesota Counties: Tri-County Solid Waste Administration serving Stearns, Benton and Sherburne counties, Pope-Douglas Solid Waste Management, Otter Tail County Solid Waste and Tri-County Solid Waste, serving Nicollet, Le Sueur and Sibley Counties with the assistance of a grant from the MPCA. Other major partners include Winona County, McLeod County, Minnesota Milk Producers and the Minnesota Department of Agriculture.

AF&PA targets regulations, taxes, transportation and trade among top 2017 Advocacy Priorities

The American Forest & Paper Association (AF&PA) announced 2017 advocacy priorities that include smarter regulations to unleash economic growth, comprehensive tax reform, efficient transportation and trade policies that advance U.S. competitiveness. The association will pursue these over the coming year to support the paper and wood product manufacturing industry's ability to create jobs and grow the economy.

"With 900,000 employees in family-wage jobs in large and small communities across 45 states, the forest products industry is the face of U.S. manufacturing. Our future grows even brighter when forward-thinking public policy unleashes our ability to invest, innovate and compete on a greater scale at home and around the globe," said AF&PA president and chief executive officer Donna Harman. "We look forward to working with the new Administration and Congress to achieve shared goals of growing the economy and creating opportunity for all Americans. Along that road, we will support policies that ensure regulations do more good than harm. And we will back key steps, including comprehensive tax reform, efficient transportation measures and trade measures that recognize our strong global market position, to set a foundation for economic expansion now and in decades to come."

AF&PA's top advocacy priorities for the coming year:

•Smarter Regulations to Grow the Economy: The cost, complexity and volume of regulations disproportionately affects manufacturers. Regulations must be designed to provide net benefits based on the best scientific and technical information through a transparent and accountable rulemaking process, with due consideration of the cumulative regulatory burden. A top focus remains resolving the regulatory treatment of biomass carbon. In addition, we will work to stem the tide of overreach on air and water regulations affecting the industry, including modernizing the cumbersome air permit process and

The American Forest & Paper ensuring reasonable, science-based ociation (AF&PA) announced 2017 human health water quality criteria.

•Comprehensive Tax Reform: Comprehensive reform of our tax system will improve economic growth, job opportunity, capital investment and the competitiveness of U.S.-based businesses and is critical. Lower tax rates are needed for all businesses and reforms should support investment in US manufacturing while recognizing the complex global supply chains that make robust US manufacturing possible.

•Transportation Efficiency: Our industry's shipping functions must be globally competitive. Safely increasing truck weight limits on federal interstate highways and freight rail system rate and service improvements are necessary and have our support.

•Trade: U.S. paper and wood product manufacturers need unrestricted access to international markets and a level playing field among international competitors through the elimination of both tariff and non-tariff barriers. Trade agreements that generate substantive economic benefit to U.S. forest products manufacturers and their workers should be maintained. Enforcement of trade agreements and laws that ensure all nations play by the rules so that trade flow is not arbitrarily distorted are essential.

Bottles turned into blankets

Emirates has created new sustainable blankets made from 100 percent recycled plastic bottles. The soft and warm blankets are made using ecoTHREAD and is available in Economy Class on long-haul flights.

Each Emirates ecoTHREAD blanket is made from 28 recycled plastic bottles. With the latest innovation, the bottles are recycled into plastic chips before being turned into yarn, creating a polar fleece material. The fine thread is then woven into soft blankets.

The environmentally friendly blankets were designed in partnership with Buzz, an inflight product specialist, and are part of Emirates' attempts in product innovation and sustainability. Emirates already runs a green program on board recycling aluminum cans, plastic and glass bottles and clean paper products such as newspapers, magazines and cardboard cartons where possible.

By the end of 2019, Emirates ecoTHREAD blankets would have rescued 88 million plastic bottles from landfills – equivalent to the weight of 44 A380 aircraft. This initiative makes it the largest sustainable blanket program in the airline industry. In addition, the manufacturing process of using recycled polyethylene terephthalate reduces energy emissions by 70 percent.

ecoTHREAD is certified with the Intertek Green Leaf Mark by third party testing and certification body Intertek, independently verified to use 100 percent recycled materials.









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EQUIPMENT SPOTLIGHT



Plastic Granulators

by MARY M. COX

maryc@americanrecycler.com

Enough plastic is thrown away each year to circle the earth four times - and plastic in a landfill can take up to a thousand years to degrade.

According to the Recycling Coalition of Utah, only about 25 percent of the plastic produced in the U.S. is recycled even though the process requires 88 percent less energy than using raw material to make new plastic.

Granulators are used in recycling plastics because the machines rapidly reduce the plastic and other materials.

"At the Conair Group, we believe that key to the successful use of reclaimed plastics is pristine regrind," explained Dave Miller, general manager, size reduction. "If you produce granules that are consistent in size,

Conair Group

with minimal dust, fines or longs, you will experience better processing melt properties, fewer problems in material handling, less filter clogging and, ultimately, better part quality." Conair is a global supplier of plastics-processing auxiliary equipment.

Conair offers a broad range of granulator configurations, from smaller units designed for recycling scrap on the processing plant floor, to large machines capable of handling even large, heavy-walled parts at rates that can exceed 1,000 lbs. per hour. Special purpose units, including some developed to process difficult materials such as large volumes of scrap plastics film and thin sheet, are also available. Regardless of size or configuration, every Conair granulator is designed with a "constant cutting diameter" feature that ensures the position of the rotor knives relative to expanded the bed knives remains the same in

despite knife sharpening, adjustment or replacement. "This constant cutting diameter is key to consistently producing pristine regrind," said Miller, "and it is key to generating maximum value for the recycler."

Another factor in ensuring maximum profitability, according to Miller, is efficient scrap handling before and after granulation. Because staff members

at Conair possess extensive experience in plastics material handling, they can supply tailored feeding solutions, including conveyors, film-unwinding equipment and specially designed feed

> hoppers to accommodate large, heavy or unusually shaped scrap. Downstream from the granulator. Conair's material-handling

expertise comes into play. A basic system might use a blower or vacuum pump to convev regrind from the granulator catch bin to storage bins. To separate lighter-weight materials (paper, for instance) from heavier

plastics regrind, scrap passes first through an elutriator where plastic granulate falls out while paper and/or other lightweight materials are blown through to a second cyclone and bag filter.

For four generations, Herbold has designing, been manufacturing,

installing and servicing a full line of high quality size reduction equipment, including granulators and shredders. U.S. operations began in 1996 and



Herbold Meckesheim USA

with a brand new warehouse increasing the number of available stock machines and parts. Herbold's line of granulators - including heavy duty, general use, force fed, and compact machines – offer throughput capacities ranging from a few hundred pounds per hour to eight tons.

The popular SB Series delivers high throughput by means of a patented force feed system that convevs material to be granulated from the unit's hopper to the grinding chamber via conveyor screws. This technique offers 30 to 50 percent greater throughput versus gravity feeding. Other benefits include less power consumption, quieter operation, no fly back, reduced wear to the cutting blades and reduced fines.

"Plastics processors are always looking for solutions that will allow them to process more materials faster and spend less money doing it," Herbold USA president David Lefrancois, stated. Herbold's ease of maintenance, service access and adjustable rotor/bed knives help meet that challenge. Both

See PLASTIC GRANULATORS, Page B6



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Chicago-area hospitals share successes, challenges of pilot healthcare plastics recycling program

The Healthcare Plastics Recycling Council (HPRC), in collaboration with the Plastics Industry Association (PLASTICS), has completed a multi-hospital plastics recycling project in the Chicago market. Focused on non-infectious plastic packaging and products collected from clinical areas of the hospitals, the project sought to demonstrate a viable business model for recycling healthcare plastics on a regional level.

Participating hospitals included Advocate Illinois Masonic Medical Center, and NorthShore University HealthSystem's Evanston, Skokie and Glenbrook Hospitals. These hospitals collected a variety of healthcare plastics, primarily from main operating rooms and ambulatory surgery centers, including polypropylene and polyethylene resins in the form of sterilization wrap, irrigation bottles, basins, pitchers, trays, Tyvek®, and rigid and flexible packaging materials. These materials were then transported by waste haulers to material recovery facilities for assessments related to composition and quality. Complexity of material types, improper sorting, and the presence of non-conforming materials were the primary challenges in being able to extract the recycling value from the materials.

"This project provided valuable insights into the realities of implementing plastics recycling programs in clinical healthcare settings," says Chris



Rogers, HPRC project manager. "What we learned is that collection of plastics must be made simple for clinical staff in order to be effective. Detailed sorting at the point of generation is too complex and a distant priority from clinician's primary focus of ensuring positive patient outcomes. It's also important to remember that behavioral change around recycling can be a slow process, one that takes constant reinforcement over time."

Companies providing logistics and recycling support included Waste Man-

agement, LakeShore Recycling Services and Antek Madison. Key Green Solutions, LLC, a sustainability management software service provider, collected and maintained project metrics. PLACON provided additional financial support to the project as an interested end-user looking to create new products from the recycled materials. Petoskey Plastics supplied specialized bags for collection and transportation of the plastic materials.

"In addition to testing the recovery and mechanical recycling of healthcare

plastics, we were also able to explore alternative pathways of chemical recycling and conversion to fuel products with our technology partners," said Kim Holmes, senior director of recycling and diversion at PLASTICS. "Proving the value of these hospital plastics in the conversion process was an exciting dimension of this project and underscores the importance of adding non-mechanical recovery technologies to our resource management tool kit."

Additional key project insights include:

•Keep it simple: Collection of plastic materials must be simple for clinical staff participation.

•Program champions are critical: Tap engaged and committed program champions within each stakeholder group.

•Behavioral change is a process: Remember that behavioral change can be slow and requires consistent reinforcement of the desired behaviors.

•Discuss ownership: All stakeholders need to discuss and agree on who will be responsible for sorting as comingled materials have marginal value.

•The economics must work: To make a business case, plastic materials must be available in sufficient volumes and processes must be in place to ensure a clean supply.

For a direct link to the complete report, view this article on www.AmericanRecycler.com.









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INDUSTRY PROFILE

A Closer Look

by Donna Currie

Vortex De-pollution and Recycling Equipment Nigel Dove • 303-900-4040

Vortex De-pollution and Recycling Equipment got its start in the UK, according to the chief executive officer, Nigel Dove. He explained that regulations in the UK are more strict than those in the U.S. in regards to handling fluids from cars that are scrapped. His company built a closed-loop system that could remove the fluids in a way that followed those regulations.

While the regulations implemented in 2004 in the UK caused a boom in Dove's business, it didn't last. Companies were quick to comply and Vortex built and sold a lot of machines at the beginning, but business tapered off as all the companies came into compliance and no more equipment was needed. Dove thought, "Let's go to America and get set up there."

In 2008, Dove took three months to tour the U.S. and look into the business opportunities. He opened his business in the U.S. in 2010 and moved here full-time two years later. Now his company operates in Europe, the UK and the U.S.

Dove said that in Europe, environmental rules were because of an actual need. It's all about "holes in the ground," Dove said. In the U.S., there is still plenty of space to dig another landfill, but that's not true in Europe or the UK.

He also said that European and UK recyclers complied with the regulations much more willingly than what he saw in the U.S. Because of that, he had to change his marketing strategies. Instead of selling machines because it was the right thing to do, "We had to prove its merit on cost and less on the environmental side," he said.

After designing and building machines for removing fluids from cars, Vortex expanded their product line and now manufactures a machine that automatically processes catalytic converters so that the final components are ready to go to a smelter. To complete the process, they are an agent for a company that makes smelting machines, so customers can buy the whole system from one source.

They also manufacture a hydraulic compressor that crushes automotive engines and transmissions for recycling.

Besides making machinery in Colorado and Michigan, the company is also a distributor of metal balers, shears, and shredders, all of which are currently manufactured in Italy. He said that the Italian manufacturer "puts together a strong, durable, cost efficient" machine that is 25 percent less expensive than similar machines on the market, even with the shipping costs. He noted that the current monetary exchange rates also helps make the machines more affordable here

Dove plans on expanding his product line to cover an even broader market, moving beyond automotive recycling to include the general waste industry. He also plans on forging more relationships with European manufacturers to bring some of their products to the U.S.

Dove found that building automotive recycling equipment for the U.S. was different than what he made for the overseas markets, "even though the end result is the same." At the same time, US customers want the process to be fast.

One difference was that since cars in the U.S. are larger and heavier, the engine crusher needed a 4 foot box instead of a 3 foot box. There's a 3/4-inch pipe for liquid transfer in the U.S. compared to 3/8-inch in Europe so the liquids can be drained faster.

Even the way wheels are made is different. Because cars weigh so much more in the U.S., the wheels need to be engineered to be able to survive those heavy cars bumping over potholes. Rims in the U.S. are thinner in the center but thicker at the rims. Dove had to figure out how to remove those wheels in a different way than what was done in the UK.

When it comes to removing fluids from cars, the vast variety of cars in the U.S. makes it more complicated, but Vortex wanted to create a system that could handle any car, without the need for extra tools to handle special situations. His aim was to design a system so it could handle any car within five to ten minutes, including the ones that had shielded gas tanks or other special designs that made it harder to get to the fluids.

Still, Dove says that his favorite part of his job is designing machinery that makes the customers happy. He said that recently a customer wanted a machine that could process 400 catalytic converters per hour, and brought 600 for a test. The Vortex machine processed 540 converters in the first hour. "I like to design things like that for people," Dove said.

While he enjoys the design process, he's most proud of the customer satisfaction when the machines meet the customers' needs. "We almost never get a complaint," Dove said, "and when we do, it's because we've done something silly and we make it right."

Innovations in recycling wraps and bags awarded

The American Chemistry Council's Plastics Division (ACC) disclosed that Mecklenburg County, North Carolina; the City of Vancouver, Washington; and Safeway/Albertsons have been selected to receive Innovation in Plastics Recycling Awards.

The awards recognize companies, nonprofits and government bodies that bring new technologies, products, and initiatives to communities and the marketplace that demonstrate significant innovations in plastics recycling.

All three winners are partners of the Wrap Recycling Action Program (WRAP), a public-private partnership with the goal of increasing the volume of plastic wraps and bags (collectively known as plastic film) recycled, through public education and sharing tools and best practices.

•Mecklenburg County, North Carolina, launched its WRAP campaign in the fall of 2016 after a recent survey found that only half of county residents were aware that flexible plastic wraps and bags should be brought to grocery or retail stores instead of curbside to be recycled. Moreover, the survey found that few residents were aware of the many types of plastic wraps and bags that can be recycled.

•Vancouver, Washington, along with its partners, Clark County, Washington and Waste Connections, launched an educational campaign in 2015 when they observed that their residents were eager to recycle plastic bags and wraps but unsure of proper recycling methods for these materials. "Too frequently residents were putting these materials into curbside recycling carts where they created processing complications at the recycling processing center and became too degraded to actually be recycled," said Rich McConaghy, environmental resources manager for the city of Vancouver.

•Safeway/Albertsons locations in the Vancouver, Washington, area served as the city's retail partner for its WRAP campaign. Twelve locations posted educational signage about film recycling and encouraged their customers to bring back their plastic film for recycling. Safeway/Albertsons also participated in pre and post-campaign film audits, which showed that during the campaign, the amount of film collected increased by 125 percent while contamination remained low.

ACC's Innovations in Plastics Recycling Awards contest is open to all U.S. companies, nonprofits, individuals and government bodies (including schools) that collect or process plastics for recycling, promote plastics recycling through education and infrastructure, manufacture equipment used to collect or process plastics for recycling or manufacture a new product made in whole or part from recycled plastic.

Plastic granulators Continued from Page B4

sets of knives are adjustable to provide a more efficient cutting action than fixed rotor knife machines. With Herbold's knife adjustment fixture, knives are adjusted outside of the unit which allows for more precise alignment, higher throughput and reduced downtime. Another bonus of adjustable rotor knives is the additional amount of knife sharpenings, which is nearly double that of fixed rotor knife machines.

Hosokawa Polymer Systems (HPS) is a global manufacturer of granulators, shredders, dedusting and separation systems, washing lines and other plastic recycling equipment. "With over 50 years of experience and thousands of granulators and systems delivered worldwide, HPS has distinguished itself by supplying quality equipment and system solutions," said Doug Ort, vice president/general manager. The HPS line of granulators range from 3 to 600 hp, for a variety of plastic recycling methods including: injection molding, blow molding, extrusion, film and postconsumer plastic recycling.

The majority of HPS systems manage plastics but other systems are available for materials such as paper, food, wire and cable. "Many of our granulators and systems are still operating after 40 plus years in production and the hallmark of our equipment is robust design and longevity. Key features in our granulator designs are high cutting efficiency, easy granulator knife access,

fast screen changing, and a range of cutting technologies. These granulators deliver production capacities from several hundreds of pounds per hour to over 10,000 lbs. per hour," noted Ort.

The HPS workhorse models for large volume recycling are the Alpine Rotoplex and CL granulators and their heavy duty line of granulators. The Rotoplex and CL products feature a patented cross scissor cutting technology which utilizes many short rotor knives, positioned side by side, compared to competitive models fitted with one or two knives per row. If damaged, not all knifes need to be replaced on the Rotoplex or CL.

Also, this cutting technology distributes recycled material evenly throughout the whole chamber instead of directing material in one direction or to one side, as is the case with some other cutting methods. Ort explained, "This cutting action minimizes wear and maximizes throughput. These granulators also keep a constant cutting circle and the rotor knives are adjusted outside the chamber for easier knife gap adjustment." He commented that there is a growing trend in export restrictions for recycled plastics. This has caused U.S. market players to recycle difficult waste streams in a more economical manner. So, HPS continues in developing technology to meet those emerging market demands.

Associations and nonprofits come together to accelerate plastics recycling efforts

nonprofits has announced the formation of the North American Plastics Recycling Alliance (NAPRA), a new coalition that is working to significantly grow plastics recycling in the United States and Canada.

NAPRA represents the full plastics and recycling value chain from resin manufacturers and processors to brand owners and recyclers, all of who share a vision in which plastics are recognized for their value and recovered for their highest and best use.

In recent years there has been dramatic growth in the types of plastics collected for recycling and consumer access to plastics recycling programs in North America.

For example, the recycling of plastic film, a category that includes plastic wraps, bags and commercial packaging, has grown 74 percent since 2005 and reached a rate of 17 percent in Additionally, U.S. recycling of nonbottle rigid plastics has increased 300 percent since 2007 to over 1.0 billion lbs.

"Plastics recycling reduces waste and carbon emissions, saves energy, and conserves resources all while providing jobs and benefitting the economy," said Steve Alexander, executive director of the Association of Plastics Recyclers. "The organizations that participate in NAPRA are committed to growing these benefits by accelerating progress in plastics recycling."

'Collaboration is the key to accelerating our progress towards a more sustainable society. The opportunity for effective improvement of plastics recycling can be greatly enhanced by the collaboration of NAPRA participants," said Nina Goodrich, executive director of Green Blue and the Sustainable Packaging Coalition, which

A group of trade associations and 2013 with 1.15 billion lbs. recycled. founded the How 2 Recycle Package Label. "Collectively we can make a significant impact."

"Scrap plastic is a valuable resource, and represents a dynamic and growing segment of the recycling industry," said Robin Wiener, president of the Institute of Scrap Recycling Industries. "ISRI is excited to be part of NAPRA to work together advance plastics recycling through improved communication and education.'

The following organizations participate in NAPRA:

- •American Chemistry Council www.americanchemistry.com
- American Institute for Packaging and the Environment www.ameripen.org
- Association of Plastic Recyclers www.plasticsrecycling.org
- Canadian Plastics Industry Association www.plastics.ca

· Asociación Nacional de Industrias del Plástico AC www.anipac.com

- •Carpet America Recovery Effort www.carpertrecovery.org
- •Foodservice Packaging Institute www.fpi.org
- •Institute of Scrap Recycling Industries www.isri.org
- Beautiful Keep America www.kab.org
- National Association for PET Container Resources www.napcor.com
- National Waste and Recycling Association www.wasterrecycling.org
- •PAC, Packaging Consortium www.pac.ca
- •Recycling Partnership www.recyclingpartnership.org
- •SPI The Plastics Industry Trade Association www.plasticsindustry.org
- •Sustainable Packaging Coalition (SPC) www.greenblue.org
- Vinyl Institute (VI) www.vinylinfo.org

Paper/plastic

■Continued from Page B1

winter – are a big problem for reprocessors," Vogt said. "Glass is a problem because it is very abrasive. Wet or even frozen paper cannot be sorted and add a lot of contamination to the plastic stream, especially the mixed plastics and film stream.'

Jafer Patterson, executive vice president at Junk King Franchise Systems, said that single stream recycling has made the idea of recycling easier for consumers, however single stream recycling can have a negative effect on the recycling process.

"Due to the convenience of being able to dispose of all recyclable items in the same bin and then putting the bin on the street, consumers turn a blind eye to process," Patterson said. "What they don't realize is that when all recyclable items are housed in the same bin the items can be become contaminated due to the different degrees of recycling products. By recycling this way there is also an increased amount of broken glass which becomes a contaminate. When this happens, there is more of a chance the items will be downcycled instead of truly recycled. This results in a lesser quality item being reproduced from the recycled products."

There are a myriad of things that can be done on the part of recycling companies and municipalities to increase recycling in the paper and plastic segments. For instance, municipalities can easily implement a consumer pre-sorting program by providing more collection sites with clearly labeled bins where consumers can deposit their discarded recyclable items appropriately.

"This will increase quality as well as reduce costs for the recycling companies," Davis said. "As recycling companies thrive, more recycled materials being reused.'

Vogt stressed that municipalities need to commit to processors with supply. "Plastic recycling can be done in an energy efficient way, but it will only work if municipalities start to work more closely with the industry, by providing guaranteed good quality supply," Vogt said. "They need to pay more attention to the quality of the processor and the actual recycling rates and not just the price. Also, with such low resin pricing, brand owners and manufacturers need to commit to recycled resin use. We need to learn to understand that the cost of not recycling is much higher than the cost for landfilling our waste."

Davis believes that as the technology of recycling evolves and awareness of recycling everyday products grows, that the paper and plastics recycling markets will realize not only a steady growth but also an increased demand for recycled materials.

"I think plastic recycling is needed more than ever, especially with more and more packaging being converted to plastic," Vogt said. "We can't keep throwing it out, filling up landfills and contaminating our oceans. Plastic recycling makes sense. It saves energy and protects our country and environment. People must begin to understand this."

Industry experts agreed that increasing the number of paper and plastic types accepted for recycling could increase rates. "Recycling companies and municipalities that provide properties with well-labeled waste containers and signage could also help, but, unfortunately, even an instructional poster can be ignored," Longshore said. "Education and habit-building are ultimately key. With knowledge, recycling can become second nature."

Kaufmann agreed. "The one thing that I know will help is making it clear to consumers what the actual benefits are from the recycling," Kaufmann said. "People are always surprised when I tell them how many trees are saved by our recycling of paper – 17 trees per ton of paper. So a single truckload of baled paper sent to the mill -42,000 to 45,000 lbs. – saves about 375 trees.'

"While the paperless society is a myth, we are a lesser paper society," Kaufmann said. "While that may

decrease the amount of paper available to recycle, the fact that identity theft and theft of important information is an ever-growing problem means that we will recycle a greater percentage of paper, so the industry will not go away. I believe the paper shredding industry will change as the total amount of paper may decrease. There will be a continued migration from on-site shredding trucks to more efficient plant based shredding."



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