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**Collection of organics grows**



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## Advanced mixed waste MRFs tackle diverse challenges

by MIKE BRESLIN

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Over the past few years the precipitous drop in recycled commodity prices has hurt the entire American scrap recycling industry, especially single stream MRFs and the burgeoning advanced mixed material recovery facilities (AMMRF), often derogatively called “Dirty MRFs.” It’s an unfortunately negative name for these new, high-tech automated facilities that are designed to recover more recyclables from mixed waste and produce waste-derived fuel for energy and compost, all while minimizing materials sent to landfill.

The drop in commodity prices was recently attributed to the temporary closure of a new \$35 million dollar advanced mixed materials recovery facility that opened last year in Montgomery, Alabama. Known as the Infinitus Renewable Energy Park, or IREP, the 81,992 sq.ft. plant served the City of Montgomery. According to Bulk Handling Systems, which built the system’s equipment, it’s one of the most advanced recycling facilities in the country. IREP was estimated to divert 60 percent of Montgomery’s waste from landfill, however waste and recyclables that were being recovered at IREP are now being temporarily landfilled. About 100 people were employed at IREP. Future plans at IREP included an anaerobic digestion system to handle the organics fraction and create compressed natural gas (CNG) and compost as well as help offset operating expenses.

Peter Raschio, marketing manager for Bulk Handling Systems (BHS), the provider of IREP’s equipment said, “We refer to these systems as advanced mixed materials recovery facilities (AMMRFs). BHS designed, engineered, manufactured and installed IREP’s recycling



MSW System Running: Highly automated optical sorting systems are at the heart of advanced mixed material recovery facilities.

PHOTO COURTESY OF BULK HANDLING SYSTEMS, INC.

system and provided on-site support, systems optimization and reporting, among other services.

“An advanced mixed materials recovery facility can handle the majority of a community’s waste stream or work in tandem with other MRFs, including those processing single stream materials. In order to maximize recovery it’s necessary to recover the organic content in the waste stream, which can be accomplished with an AMMRF. For example, our Newby Island installation in California is extracting restaurant waste and other organic materials that are used in a dry anaerobic digestion process to create energy and compost.”

As diversion goals continue to arise around the country, communities will need to process the entire waste stream to meet them. BHS engineered the first MSW recovery system in the U.S. to divert more than 50 percent of waste from landfill and while capturing more than 90 percent of high value commodities like metals and PET plastics on the first pass.

“Our first mixed materials installation in San Jose was really a first of its kind,

successfully processing MSW and recovering a high percentage of available recyclables,” said Raschio. “San Jose now sends all of its commercial waste to another facility, a 110 ton-per-hour system capable of handling four distinct material types at recovery rates in excess of 75 percent.”

Griffith Waller, public relations specialist for City of Montgomery commented on the situation: “IREP-Montgomery has only temporarily ceased operations. We remain hopeful to reach a solution in the coming weeks that’s a win-win for all parties involved: the City of Montgomery, Infinitus Energy, our citizens and the environment.”

Jeremy O’Brien, P.E., BCEE and director of applied research for the Solid Waste Association of North America (SWANA) shared his take on mixed materials recovery facilities. For over 50 years, SWANA has been the leading professional association in the solid waste field. The association serves over 8,000 members throughout North America, and thousands more with conferences, certifications, publications, and technical training courses. Its

mission is to advance the practice of environmentally and economically sound management of municipal solid waste.

“Europe has had what some people here call “Dirty MRFs” for over 20 years,” said O’Brien. They call them mechanical biological treatment systems. The reason they have had them for that long is because the European Union adopted a Landfill Directive which required countries to meet certain reductions in the percentage of biodegradable waste sent to landfills. As a result, there have been two major approaches to diverting biodegradable waste. One is waste-to-energy systems and there have been a lot built in Europe over the last 20 years. There are currently 472 waste-to-energy plants in Europe. The other approach is mechanical biological treatment systems. Their purpose is to process waste, recover the remaining recyclables and then process the remainder of the fraction so it’s no longer biologically degradable and considered stable. Then that biodegraded waste can either be landfilled or burned in a waste-to-

See CHALLENGES, Page 4

# SOLID

## Brazil leads in aluminum recycling

The country recycled 98.4 percent of packaging in 2014

The Brazilian Aluminum Association (ABAL) and the Brazilian Association of Highly Recyclable Cans Manufacturers report that in 2014 the country recycled 289,500 tons of aluminum beverage cans out of the 294,200 tons available in the market, a growth of 12.5 percent over the previous year. Thus, the recycling rate for aluminum beverage cans reached 98.4 percent, keeping Brazil as the world leader since 2001.

According to data of the two entities, 22.9 billion packs were recycled last year, which corresponds to 62.7 million per day or 2.6 million per hour.

According to Recycling Market Committee coordinator, Mario Fernandez, the recycling industry in Brazil has grown and matured. "For over 10 years we have been the country with the highest rate of aluminum cans recycling worldwide, sustaining a performance of over 90 percent. This demonstrates both the maturity level and the structure for the Brazilian recycling market. This is an increasingly outstanding market for the industry, the society and the environment."

For Renault Castro, chief executive officer for Abralatas, "maintaining the recycling ratio close to 100 percent demonstrates that the model, which is a benchmark for drawing up the National Solid Waste Policy, has consolidated itself and serves as an example for a low-carbon economy, also generating jobs and income, according to the objectives to be achieved at COP-21 in Paris."

In 2014 alone, collecting aluminum beverage cans injected R\$845 million in country's economy, thus contributing to generating income and jobs for thousands of waste pickers. Moreover, the recycling activity consumes only 5 percent of electrical energy, when compared to the primary metal production process. This means that recycling 289,500 tons of cans in 2014 allowed savings of 4,250 GWh per year for the country, a figure that corresponds to the annual residential consumption of 6.6 million people in two million homes.

An analysis on the beverage aluminum can lifecycle in Brazil, an unpublished study by the Packaging Technology Center, has confirmed the advantages of this packaging for the environment.

According to that survey, recycling aluminum cans for obtaining a new package reduces CO<sub>2</sub> emissions by 70 percent and energy consumption by 71 percent, among other benefits, when compared to cans made only with primary aluminum.

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## Call2Recycle appoints new board members

Call2Recycle, Inc. has elected two new members to its board of directors. The addition comes as the organization builds upon its rechargeable battery collection and recycling program and expands into primary (single use) battery collection and recycling in the U.S.

The two new members joining the Call2Recycle, Inc. board are Marcus K. Boolish, Energizer and Daniel Hutter, from Spectrum Brands, parent company of Rayovac. The two were selected for their breadth of experience, battery industry knowledge and environmental commitment.

Boolish is director of regulatory and government affairs at Energizer Battery Manufacturing, Inc. Since 2000, his role has included environmental affairs and sustainability.

Hutter serves as division vice president, Global Sustainability for Spectrum Brands and has 16 years experience in corporate responsibility and sustainability.

## Florida chapter of the National Waste & Recycling Association honors legislators

In conjunction with its statewide legislative meetings and Florida Recycles Day, the Florida Chapter of the National Waste & Recycling Association (NWRA) honored three state legislators as "Legislators of the Year" for their support of the Florida waste and recycling industry.

Senator Wilton Simpson (R-Trilby) and Representative Lake Ray (R-Jacksonville) are recognized for their continued commitment to the Natural Gas Vehicle Fleet Rebate Program. This program allows both public and private entities to apply for rebates to purchase or convert vehicles to natural gas. Nationally, the waste and recycling industry has been leading the way in the adoption of the use of clean natural gas vehicles, and in Florida NWRA members have been able to benefit from this program as they convert their fleets to natural gas. Senator Simpson and Representative Ray are both long-time supporters of the waste and recycling industry in Florida and have been

honored previously by the NWRA Florida Chapter as "Legislators of the Year."

Representative Halsey Beshears (R-Monticello) is recognized for filing legislation to end public records abuse. His legislation seeks to protect private company information, such as profitability, pro-formas, personnel records, employee information, safety and operating statistics. NWRA believes private companies should be protected from the unnecessary and invasive revealing of company information from third party companies and entities.

In addition, the Florida Chapter of NWRA released today statewide economic impact data on the waste and recycling industry in the state for the first time. In conjunction with their annual chapter meeting, Florida NWRA members are meeting with legislators and regulators to discuss the positive impact of the waste and recycling industry in the Sunshine State. NWRA members are significant con-

tributors to state economies nationwide, providing high quality careers and well-paying jobs while providing services that are essential to waste removal, recycling and environmental protection.

In Florida, the private waste and recycling industry employs 69,000 people (directly and indirectly), has a total annual payroll in excess of \$2.8 billion, generates annual revenue of \$10.1 billion, and the average annual compensation for an industry employee is \$47,277.

"The waste and recycling industry touches virtually all Florida businesses and residents," said Charlie Latham, chair of the Florida Chapter of the NWRA, and government affairs manager for Waste Management, Inc. "Our industry contributes to our state economy in many ways: through high-paying jobs, the combined payroll of our membership, and also through the broader impact we have doing business with other industries in the state."

## FCA U.S. Belvidere Assembly Plant teams up with PepsiCo Recycling

The FCA U.S. Belvidere Assembly Plant, located in Illinois, with assistance from PepsiCo Recycling, is launching a new program that will not only make recycling more convenient for its employees, but also help support disabled U.S. veterans.

Through the PepsiCo Recycling program, new recycling bins have been located in high traffic areas throughout the Belvidere plant. The materials collected in

PepsiCo Recycling bins, including recyclables from Belvidere, help support PepsiCo Recycling's partnership with the Entrepreneurship Bootcamp for Veterans with Disabilities (EBV), which provides training in entrepreneurship and small business management to post-9/11 veterans with disabilities. PepsiCo has donated \$1.5 million to EBV since 2010.

"In a plant with nearly 4,500 employees that runs 6 days a week, we

knew we were putting thousands of recyclable cans and bottles into trash containers destined for landfills each day and were looking for a way to change that behavior," said Michael Keefe, Belvidere's Environment Lead. "Through the partnership with PepsiCo Recycling and with the support of our UAW partners, our employees can feel like they are making a real difference in our environment and giving back to

those who gave so much to protect our way of life."

With only 12 percent of public space currently offering beverage container recycling solutions, the partnership between the Belvidere plant and PepsiCo is an important step in increasing the availability of recycling at the plant and engaging employees, of whom 8 percent are veterans themselves, to be part of this initiative.

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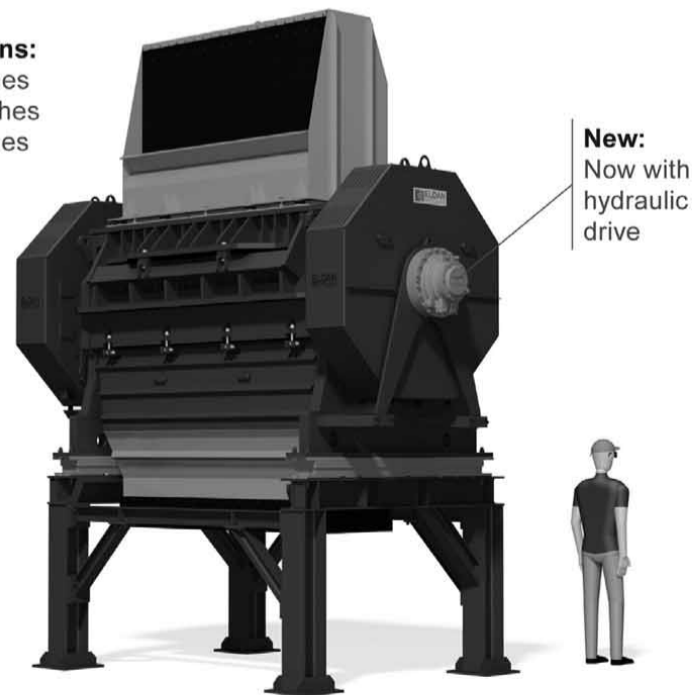
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# NWRA sets guidelines to improve safety

The National Waste & Recycling Association (NWRA) released new safety Best Practices for operators of material recovery facilities (MRFs), landfills and transfer stations as part of its comprehensive industry-wide safety effort. As a result of a year long effort from NWRA's Safety Committee, comprised of leading safety experts from throughout the industry, this set of Best Practices encourages all members and other service providers to incorporate these guidelines into their operations. These Site Safety Best Practices are the first step in NWRA's comprehensive emphasis on safety.

"These Best Practices, which might be adjusted for site specific circumstances, should be part of a comprehensive on-site safety program," said Sharon H. Kneiss, NWRA president and chief executive officer. "They can be especially valuable for compa-

nies seeking to address safety in managing temporary workers, contractors and visitors that may not be as familiar with post-collection waste and recycling operations as they are for full-time industry personnel."

The Site Safety Best Practices cover issues ranging from tipping floor safety to the use of personal protective equipment, and incorporating safety technologies such as cameras and alarms on mobile equipment. The Practices also include guidance on making facilities safer through improved communication among all parties in a MRF, transfer station or landfill while minimizing distractions caused by mobile phones.

NWRA has made safety its top priority, a pledge shared by its member companies. These Site Safety Best Practices were developed given the unique characteristics of MRFs and

landfills, considering that areas such as the tipping floor of a transfer station and landfill are environments where waste industry employees, the general public, heavy machinery, collection trucks and tons of material meet in close proximity. These industry Best Practices are aimed at keeping everyone involved safe.

In November, NWRA's Kneiss issued a call to action on safety asking the industry to work toward significantly reducing injuries and fatalities in waste and recycling facilities as part of a comprehensive, data-driven and multifaceted initiative. NWRA is making in-house experts available to member companies to assist in adapting the Site Safety Best Practices to their individual facilities and implement them accordingly.

For the complete list of Best Practices, view this article on [www.AmericanRecycler.com](http://www.AmericanRecycler.com).

## Challenges

■Continued from Page 1

energy plant. They've found they cannot compost that material because it's too contaminated.

"There's some history in the U.S. with mixed material recovery facilities. Some jurisdictions decided not to have source separation systems, but they didn't do well in terms of recovery rates and contaminated recyclables. They didn't grow in popularity. There are still a few of them around. But since then there have been advancements in technology and also recognition that these so called Dirty MRFs, or what I prefer to call mixed waste recycling facilities, have applications for certain types of waste generators. For example, in San Jose, California, which is a zero waste community, they have good recycling rates, but they never could get high diversion rates from multi-family residences. So they decided to go for a mixed waste recycling facility to process that waste and that's what they are doing. I think there are more applications for this technology in the U.S.

"Since the opening of the Infinitus Renewable Energy Park (IREP) facility

in April 2014, commodity prices have dropped on the order of 40 percent in some cases – significant drops in any case. Over the years, prices for secondary materials have, by definition, been volatile. They change all the time.

"I've talked to IREP in Montgomery about this and they told me that the next time they build a similar facility they would not be charging as low as a \$28 dollars per ton tipping fee. It appears they got in a position where they were relying heavily on recycling revenues to keep it financially viable. People were surprised that the tipping fees were so low. My estimate is the tipping fee should be in the order of \$50 to \$100 dollar per ton range. It all depends on who is responsible for residue disposal. IREP also had the possibility of recovering waste-derived fuel and selling it to industrial boilers, but that process has not been implemented yet.

"I don't like the term "dirty MRF." I prefer to call them mixed waste recycling facilities. We've had some of them for 10 years or so in the U.S. but they're not as widespread as they are in Europe. I would estimate there are less than 20 in the U.S. These types of facilities are a relatively new development here. We don't have a Directive as they had in Europe to drive the development of not only waste-to-energy but also biological treatment. I think it is well worth considering the merits of the European model for America."

To verify tipping rates at IREP, American Recycler News obtained a copy of the contract dated June 4, 2013 between IREP Montgomery MRF LLC and The Solid Waste Disposal Authority of the City of Montgomery. Page 38: (b) "The Authority shall pay I-Energy a tipping fee initially equal to \$28 per ton of city MSW delivered by or on behalf of the Authority."

According to industry experts, the economics of mixed waste processing work best when tipping fees reasonably cover the cost of processing and complementary systems are included, such as aerobic digestion, compost and engineered fuel. As yet, IREP did have those options and relied entirely on tip-

ping fees and commodity sales. Obviously, the commodity markets did not support the expected revenue.

Advanced mixed material recovery facilities do provide a number of benefits. The optical scanning technology and automated processes are proven. System uptimes are better than most single stream systems. Fibers, plastics and metals produced have proven to be of excellent quality and garner premium prices. There are also efficiencies gained by processing at a central location, including lower transportation costs and by integrating processing at one site and employing an optical sorting line for multiple incoming material streams. Moreover, mixed waste processing will be crucial if diversion goals are ever to be reached.

Surely the IREP contract will be renegotiated and the \$35 million dollar plant will resume doing good work.

## Events Calendar

### January 6th-9th, 2016

**The Consumer Electronics Association's CES 2016.** Las Vegas, Nevada. 703-907-7600 • [www.cesweb.org](http://www.cesweb.org)

### January 25th-28th

**COMPOST 2016 24th Annual Conference & Tradeshow.** Hyatt Regency Jacksonville Riverfront, Jacksonville, Florida. 301-897-2715 • [www.compostingcouncil.org](http://www.compostingcouncil.org)

### February 3rd-4th

**Association of Plastic Recyclers Meeting.** Hyatt Regency New Orleans, New Orleans, Louisiana. 202-316-3046 • [www.plasticsrecycling.org](http://www.plasticsrecycling.org)

### February 15th-17th

**BBI International - RFA's National Ethanol Workshop and Expo.** Hyatt Regency New Orleans, New Orleans, Louisiana. 701-746-8385 • [www.fuelethanolworkshop.com](http://www.fuelethanolworkshop.com)

### March 9th-10th

**GLOBALCON Conference & Expo.** Hynes Convention Center, Boston, Massachusetts. 770-447-5083 • [www.globalconevent.com](http://www.globalconevent.com)

### March 13th-16th

**28th Annual Southeast Recycling Conference & Tradeshow.** Hilton San Destin Golf Resort & Spa, Destin, Florida. 800-441-7949 • [www.southeastrecycling.com](http://www.southeastrecycling.com)

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# Pennsylvania records growth in products from recycling

Although recycling has generated questions around its costs and other complex issues, Pennsylvania continues to be a national leader, according to the 2015 Pennsylvania Recycling Industries Congress, held in the Capitol.

The amount of materials recycled in the Commonwealth is three and a half times that of the country as a whole, and grew by 22 percent in a 5 year period, from 4.8 million to 5.85 million tons, according to a study commissioned by the Pennsylvania Waste Industries Association (PWIA).

That study also showed that the waste industry – a combination of collection, disposal and recycling activities – makes an annual contribution of

\$4.2 billion to the state's economy and supports more than 26,000 jobs. Single stream recycling now accounts for 43 percent of all materials recycled in Pennsylvania, and generates higher participation in recycling because it does not require consumers to separate materials.

PWIA and the Pennsylvania Recycling Markets Center (RMC) are the joint sponsors of the Congress.

PWIA represents private-sector waste haulers, recyclers and landfill operators in Pennsylvania and is the state chapter of the National Waste & Recycling Association. The nonprofit RMC supports research and development of new recycling technologies and works with manufacturers to encourage

use of recycled materials in their operations and product lines.

Approximately 23 exhibitors showcased innovative Pennsylvania products and services made from recyclable materials – what once would have been considered waste.

"Most citizens seem to think that they simply place recyclables in a container, it gets picked up and it disappears," said PWIA president Mark C. Pedersen. "What actually happens to those materials? Recycling is a multi-billion dollar industry in the Commonwealth. Our industry has a real story to tell, and it includes innovation, investment, economic growth and environmental stewardship."

RMC president Robert Bylone said the growth of recycling has stimulated considerable "downstream" economic impact.

"Our industry has invested \$400 million in capital improvements," said Bylone. "That, in turn, has created an economic ripple impact of about \$800 million and the support of about 6,000 jobs. More than 2,200 operations are involved in the collection and processing of recyclables, about 500 manufacturers are using recycled materials, and another thousand enterprises are involved in reuse and remanufacturing. We are seeing the efforts of the RMC and its partners produce results that greatly benefit the economy."

# EPA recognized organizations for waste reduction efforts

The U.S. Environmental Protection Agency (EPA) recognized the waste reduction accomplishments of 29 participants in and endorsers of EPA's Waste-Wise program and EPA's Food Recovery Challenge. These collaborative initiatives apply sustainable materials management practices to decrease wasted food and municipal and industrial wastes in the United States, leading to economic and environmental improvements. EPA provides tools, resources and support to help participants establish baselines, set objectives, track progress

and realize their waste prevention and reduction goals. EPA reviews the data submitted by participants by employing an extensive quality assurance process.

"Food Recovery Challenge participants diverted nearly 606,000 tons of wasted food from entering landfills or incinerators in 2014, nearly 88,600 tons of which were donated to people in need," said Mathy Stanislaus, assistant administrator for EPA's Office of Solid Waste and Emergency Response. "These innovative efforts will help us achieve our ambitious national wasted food

reduction goal – a 50 percent reduction by 2030. I encourage other organizations to follow their lead by joining the Food Recovery Challenge."

In 2014, nearly 800 governments, businesses and organizations participated in EPA's Food Recovery Challenge, including grocers, educational institutions, sports and entertainment venues and restaurants. These entities diverted wasted food from entering landfills or incinerators through a variety of innovative actions, including creative re-use of trimmings by university dining staff; donating excess,

wholesome food to food banks, shelters and soup kitchens; composting in urban settings; and using wasted food to produce electricity.

EPA recognizes Food Recovery Challenge participants and endorsers with awards in two categories: data-driven and narrative. The data-driven award recipients achieved the highest percent of wasted food prevention and diversion in their sector in 2014. Narrative award winners excelled in the areas of source reduction, leadership, innovation, education and outreach, and endorsement.

2015 Food Recovery Challenge National Award Winners:

- Colleges and Universities: Salem State University, Salem, Massachusetts
- K-12 Schools: Pearl City High School, Honolulu, Hawaii
- Grocers: Sprouts Farmers Market: 24, Tucson, Arizona
- Hospitality: Ortega National Parks, LLC: White Sands Trading Company, Alamogordo, New Mexico
- Restaurants and Food Service Providers: Serendipity Catering, Denver, Colorado
- Sports and Entertainment Venues: SAVOR...Chicago-McCormick Place South, Chicago Illinois
- Other Organization: Orange County Sheriff's Department, Theo Lacy Facility, Orange, California
- Source Reduction Winner: University California (UC), Santa Cruz, Santa Cruz, California
- Source Reduction Honorable Mention: Clark University, Worcester, Massachusetts
- Leadership Winner: MB Financial Park at Rosemont/Village of Rosemont, Rosemont, Illinois
- Innovation Winner: Crystal Creamery, Modesto, California
- Innovation Honorable Mention: City of Philadelphia, Philadelphia Prison System, Philadelphia Pennsylvania
- Education and Outreach Winner: Keene State College, Keene, New Hampshire
- Endorser Winner: Massachusetts Department of Environmental Protection

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For a list of 2015 WasteWise Program awardees, view this article on [www.AmericanRecycler.com](http://www.AmericanRecycler.com).

## CONSTRUCTION & DEMOLITION

### KAB honors Caterpillar

Keep America Beautiful honored Caterpillar Inc. and its chairman and chief executive officer, Doug Oberhelman, with the 2015 Vision for America Award in New York City.

Oberhelman attended the annual award dinner to personally accept the Vision for America Award. In addition, Caterpillar hosted a national summit focused on natural infrastructure restoration as a precursor to the award dinner.

Caterpillar has a robust corporate sustainability effort focused on preventing waste, reducing resource consumption and developing better systems through innovation.

Caterpillar recognizes that sustainable progress represents a balance of environmental stewardship, economic growth and social responsibility. Working toward aggressive sustainability goals, Caterpillar's tremendous progress motivates its employees to continue working toward its vision. For example:

- Eighteen percent of 2014 sales and revenues were derived from products, services and solutions with an improved sustainability benefit.

- From 2006 to 2014, Caterpillar's facilities have reduced greenhouse gas (GHG) emissions intensity by 38 percent. And energy intensity of its operations decreased 28 percent from 2006 to 2014.

- Caterpillar recycled 90.6 percent of its by-product materials in 2014.

### Recycled materials and reclaimed warm-mix asphalt show steady growth

Nationwide, asphalt pavement mix producers continue to improve the sustainability profile of America's roads through the incorporation of recycled materials and the use of energy saving warm-mix asphalt technologies.

According to the latest survey of asphalt mix producers conducted by the National Asphalt Pavement Association (NAPA) in partnership with the Federal Highway Administration (FHWA), more than 75 million tons of recycled materials – primarily asphalt pavement material reclaimed from old roads and parking lots and recycled asphalt roofing shingles – was put to use in new asphalt pavement mixtures during the 2014 construction season.

"Asphalt pavements are inherently sustainable, because when we pave a road, we are putting in place material that can later be harvested for reuse in new pavements," stated Michael Cote, 2015 NAPA chairman and executive vice president and chief development officer for The Lane Construction Corp. "No other material is recycled at a greater rate than asphalt pavements. Well over 99 percent of material removed during maintenance or repair activities ends up being put back to use in new pavements."

The tons of asphalt pavement mixtures produced using recycled and reclaimed materials saw more than a 6 percent increase from 2013 to 2014, which is a significantly greater increase than the

increase in total tons of asphalt mixture produced during the same time period.

The survey found that nearly 72 million tons of reclaimed asphalt pavement (RAP) and 1.9 million tons of reclaimed asphalt shingles (RAS) were used in new asphalt pavement mixes in the U.S. during 2014. An additional 9 million tons of RAP were used as aggregate, cold mix, and other road-building activities. Reclaiming and reusing the asphalt cement and aggregate in RAP and RAS saved about \$2.8 billion in 2014 compared to the use of virgin asphalt binder and aggregates. This helps keep asphalt pavement mixture costs competitive and allows road owners to achieve more roadway maintenance and construction activities with limited budgets.

Producers were also asked in the survey about ground tire rubber, steel and blast furnace slags, and other waste material repurposed into pavements. Although national estimates of usage were not calculated, survey respondents reported using nearly 1.3 million tons of these materials in 2014 in the production of more than 8 million tons of asphalt pavement mixes.

In addition to increased use of recycled materials, asphalt mix producers continue to increase the use of energy-saving warm-mix asphalt technologies. In 2014, 113.8 million tons of warm-mix asphalt was produced – about a third of all asphalt pavement mix production. This marks a

greater than 577 percent increase in the use of warm mix since 2009, the first year the survey was conducted.

Warm-mix asphalt is produced with a range of technologies that reduce the production and placement temperature of asphalt pavement mixtures. A variety of environmental, worker safety, and construction benefits have been realized through the adoption of warm-mix asphalt. In 2009, FHWA selected warm-mix asphalt as one of the first technologies targeted for deployment through its Every Day Counts initiative.

"In 15 states, more than half of all asphalt pavement mixtures were produced as warm-mix asphalt, and in 6 of them, more than 75 percent was produced as warm mix. This is an incredible rate of adoption for a technology introduced just a decade ago," said NAPA president Mike Acott. "We are already seeing construction and performance benefits, as well as energy savings, with warm-mix asphalt. We continue to focus research and engineering efforts on the use of recycled materials, warm mix, and other innovations to make our long-lasting, high performance asphalt pavements even more sustainable."

The survey was conducted in mid-2015. Results from 228 companies with 1,185 plants in all 50 states, along with data from State Asphalt Pavement Associations for 35 states were used to compile the report.

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## ALTERNATIVE ENERGY

# Manure-to-energy project underway in Missouri

## Installation of biogas technology will create natural gas by mid-2016

Roeslein Alternative Energy disclosed that the turnkey facility to create and inject large quantities of Renewable Natural Gas (RNG) into the national grid system, created from one of the largest concentrations of finishing hogs in the Midwest, will be operational by mid-2016.

"The technology we have developed is ready to be deployed commercially in a project that makes both economic sense and environmental sense," said Rudi Roeslein, founder and president of Roeslein Alternative Energy. "This is not just about converting the manure from almost two million pigs into renewable energy. It's about taking environmental sustainability to a new level."

"This project will show how farmers can do more than produce food. We can make energy, we can reduce waste, and we can be good stewards for our most important resources – land and water," said Blake Boxley, director of

environmental health and Safety, Smithfield Hog Production.

Construction on the \$120 million project began in 2014 and continues on schedule.

Phase One, which is nearly 50 percent complete, involves installation of impermeable covers and flare systems on the 88 existing manure lagoons at Smithfield Foods hog finishing farms in Northern Missouri.

•The covers reduce greenhouse gases by preventing methane from escaping to the atmosphere, keep rainfall from entering the lagoons and reduce odor.

Phase Two involves fabricating and installing technology to purify the biogas captured by the impermeable covers and developing an interconnection to a natural gas pipeline operated by ANR, which transverses Ruckman Farm. RNG is projected to enter the pipeline in the summer of 2016.

•Duke Energy in North Carolina has agreed to purchase a portion of the RNG to help meet clean energy requirements for power generation.

### Key Impacts of the Project When Completed

•The hog manure from the project will produce approximately 2.2 billion cubic feet of pipeline quality RNG, or the equivalent of 17 million gallons of diesel fuel annually.

•Approximately 850,000 tons of CO<sub>2</sub> equivalent methane will be prevented from reaching the atmosphere.

•The project is providing \$120 million in new work for Missouri supply chain, manufacturing, and construction companies and their employees.

Roeslein Alternative Energy intends to supplement the hog manure feedstock with biomass harvested from restored prairie grasslands to produce additional RNG. The intent of Horizon Two is to provide an economic incentive to con-

vert highly erodible or marginal land to environmentally beneficial prairie.

•RNG production will double under Horizon Two with the addition of prairie grass biomass to supplement the hog manure feedstock.

"We are developing a mixture of grasses and native species that provide ecological services, wildlife habitat and biomass that will be co-digested with manure," Roeslein said. We hope to demonstrate the concept on a small scale at Ruckman, move it to other farms and then hopefully across the Midwest."

"With the introduction of native grasses, we not only produce more energy, but we provide habitat for our wildlife here at the farms. Habitat is something near and dear to our hearts," Boxley said.

Roeslein believes the project can be emulated in farms across the U.S. and that it has applications for developing countries.

# SolarCraft completes solar power installation at Martine's Wines

Novato and Sonoma based SolarCraft completed a 20 kW solar electric system at Martine's Wines in Novato, California. An importer and wholesaler of foreign wines, Martine's Wines is now utilizing clean solar power and saving thousands in utility fees every year. Designed and installed by SolarCraft, the solar photovoltaic system is

roof mounted and consists of 66 Canadian Solar 305 watt solar panels, spanning nearly 1,365 sq.ft.

The system's solar panels convert sunlight directly into electricity and are expected to generate approximately 29,436 kilowatt hours of emissions-free electricity each year, reducing their PG&E bills by 94 percent and provid-

ing clean energy to their warehouse facility.

"My warehouse is specially designed for the storage of wines. I need 24 hours a day refrigeration and therefore a lot of electric power," said Martine's Wines founder, Martine Saunier. "Where we are located in Novato, it is very sunny all year. It was a reasonable decision to install solar

panels on the roof with a reputable company such as SolarCraft."

By installing solar, a cost effective and sustainable energy solution, Martine's Wines can expect to recoup the cost of the system in seven years and eventually save hundreds of thousands of dollars in energy costs over the life of the system.

# Duke Energy and Google team up on solar power project

In one of the largest solar projects undertaken in North Carolina, Google will benefit from Duke Energy Carolinas' Green Source Rider program – meeting a portion of the power demand from the company's data center in Lenoir with solar energy.

A 61 megawatt solar project will be constructed in Rutherford County in Duke Energy Carolinas' service territory. Under a power purchase agreement with the Rutherford Farms, LLC, solar project, Duke Energy will secure power to meet new energy demand from Google's expanded data center.

Enrollment in the Green Source Rider means Google will use renewable energy sources for a portion of the energy supplied to its expanded data center in the city of Lenoir. Under the program, Duke Energy and Google agreed on the specific project and additional costs associated with energy from the facility. Other Duke Energy customers will not pay for the project.

"We've agreed to purchase 1.2 gigawatts of renewable power globally and we're working to power 100 percent of our operations with renewables. As we pursue that goal, this is a really big moment for us and we're thrilled to have created this program with Duke Energy," said Gary Demasi, Google's head of Data Center Energy and Location Strategy. "Not only does it enable us to purchase renewable energy for our North Carolina operations, it will empower others in the state to do the same."

In 2013, Google announced an additional investment of \$600 million to expand the Lenoir data center, and at the same time collaborated with Duke Energy to create the Green Source Rider program for large customers seeking renewable energy supply in Duke Energy Carolinas territory. Since that announcement, Duke Energy and Google have been working to execute on a renewable supply solution through the program.

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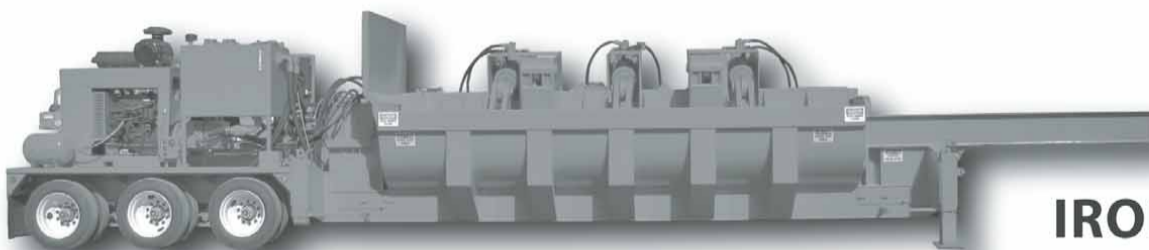
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INDUSTRY PROFILE

# A Closer Look

by Donna Currie

## Recycle Solutions

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Darren Knepper said that he came across the idea of electronics recycling about five years ago from a friend. While electronics recycling had taken hold in his friend's home state of Oregon, Knepper saw it as a new opportunity in Utah.

Prior to talking with his friend, Knepper hadn't thought much about recycling, but he knew he wanted to do something else. "I was a construction worker," he said, "and I was tired of being up on roofs all the time." He also liked the idea of working for himself, so he launched his electronics recycling business in a 900 sq.ft. space with another 200 sq.ft. that served as an office.

The business has expanded twice since then. First he moved to a 2,700 sq.ft. warehouse with an 800 sq.ft. office. Just recently, he signed a lease for more space, expanding his warehouse capacity to 11,000 sq.ft.

With all that space, there is room for sorting, scrapping, data destruction, and retail office space for the refurbished laptops and PCs that escape being scrapped. Knepper said that about 10 to 15 percent of the computers that come in can be salvaged and re-sold.

While there's plenty of room now, Knepper said that he expects that he'll need to double his storage in the next three years.

When he first started out, Knepper picked up quite a bit of materials from residences, but he found that he spent more money than he could make. Today, the majority of the materials come from schools, government institutions and large businesses who might upgrade hundreds of computer systems all at once.

Even though the business is growing, the staff is lean with just four to five employees handling the pickups, sorting, deconstructing, and selling. But the small staff is efficient, and electronics make their way from whole units to de-manufactured components quickly.

When he first started the business, Knepper didn't know what the business really entailed and had to learn as he worked, with the help of two different certification organizations that taught the proper rules, policies and protocols for deconstructing and properly scrapping electronics.

Not only is Recycle Solutions certified, but all of his downstream vendors are as well, so customers can be assured that everything ends up in the right place. While a small percentage of computers are resold, there is very little waste – just a small amount of landfilled trash that's comparable to what an average office might generate.

Knepper said that although he's good at deconstructing the electronics, he's done it for so long that it's not very interesting any more. But all that work with computers has turned him into a bit of a nerd and he enjoys seeing the progression of technology over the years. "Computers today are much different," he said.

There is a display case in the office that contains some of the older and more interesting finds that have come through the facility, including an original Walkman, a very large old hard drive, and a reel-to-reel tape player. "I save little things like that," he said. "I call it my museum."

Knepper said that if he could go back in time to when he first started the business, the one thing he might do differently is look closer at what's being scrapped. He said that he's sure that along the way he deconstructed things that could have been valuable.

Nerdiness aside, he said that what he enjoys most about the business is meeting with the customers. He'll sometimes go out on one of the trucks to meet with customers while the material is being picked up. "I like building relationships with the customers," he said, "They trust me and they've been coming back for years."

While Recycle Solutions was one of the first to get into electronics recycling in the local area, Knepper said that there are more new businesses springing up every day. But he's not worried about the competition. "The company is stable," he said. And, since he's a naturally competitive person, "I like out-doing my competitors."

Knepper said that while he's not the sort of guy who can rattle off statistics about how many tons of metal were recycled in the U.S. at any time, he can account for everything that comes in his door. He keeps serial numbers and offers certificates of destruction for computer hard drives that have important data on them.

But more than anything he's proud "that it has come as far as it has for someone who didn't know what he was doing."

Now, he hopes information about recycling will be more widely available, even if it's just an occasional news item that explains that broken cell phones and other electronics can leach toxic materials into landfills. "People just toss it," he said. "There should be more education."

While Knepper's long term goals involve doubling or tripling the size of his business, his immediate plans call for training a new driver, which will allow him to visit some customers. "People come and go," he said, "but I'm the face that's always here."

## ALTERNATIVE ENERGY

# EPA finalizes increases in renewable fuel levels

The U.S. Environmental Protection Agency (EPA) disclosed final volume requirements under the Renewable Fuel Standard (RFS) program for the years 2014, 2015 and 2016, and final volume requirements for biomass based diesel for 2014 to 2017. This rule finalizes higher volumes of renewable fuel than the levels EPA proposed in June, boosting renewable production and providing support for robust, achievable growth of the biofuels industry.

carbon emissions – is nearly 200 million gallons, or 7 times more, than the market produced in 2014. The final 2016 standard for advanced biofuel is nearly 1 billion gallons, or 35 percent, higher than the actual 2014 volumes; the total renewable standard requires growth from 2014 to 2016 of more than 1.8 billion gallons of biofuel, which is 11 percent higher than 2014 actual volumes. Biodiesel standards grow steadily over

	2014	2015	2016	2017
Cellulosic Biofuel (million gallons)	33	123	230	n/a
Biomass-based Diesel (billion gallons)	1.63	1.73	1.90	2.00
Advanced Biofuel (billion gallons)	2.67	2.88	3.61	n/a
Renewable Fuel (billion gallons)	16.28	16.93	18.11	n/a

"The biofuel industry is an incredible American success story, and the RFS program has been an important driver of that success – cutting carbon pollution, reducing our dependence on foreign oil, and sparking rural economic development," said Janet McCabe, the acting assistant administrator for EPA's Office of Air and Radiation. "With today's final rule, and as Congress intended, EPA is establishing volumes that go beyond historic levels and grow the amount of biofuel in the market over time. Our standards provide for ambitious, achievable growth."

the next several years, increasing every year to reach 2 billion gallons by 2017.

The RFS, established by Congress, requires EPA to set annual volume requirements for four categories of biofuels. The final rule considered more than 670,000 public comments, and relied on the latest, most accurate data available. EPA finalized 2014 and 2015 standards at levels that reflect the actual amount of domestic biofuel used in those years, and standards for 2016 (and 2017 for biodiesel) that represent significant growth over historical levels.

The final 2016 standard for cellulosic biofuel – the fuel with the lowest

compliance dates for refiners and other parties.

## GLASS

# Recycled glass to improve Canadian roadways

The École de technologie supérieure (ÉTS), City of Montréal, Société des alcools du Québec, Éco Entreprises Québec and RECYC-QUÉBEC disclosed the details of a partnership to support research on innovative applications that integrate recycled glass in road construction.

This common commitment will provide ÉTS with \$450,000 in funding over 3 years to conduct studies and laboratory tests on road infrastructures. The Mitacs-Accélération intern program will contribute \$220,000 more to that amount. The research project will focus on developing materials that are more durable and environmentally friendly while giving a second life to the glass containers Quebecers place in recycling bins. Test slabs offered by the City of Montréal will allow for evaluating the performance of asphalt mixes containing recycled glass.

In this project, Michel Vaillancourt and collaborators Alan Carter and Daniel Perraton, all professors at École de technologie supérieure, will look into how post consumer glass components affect the performance of asphalt mixes and other materials used in road construction.

The research team expects that the glass integrated in asphalt will improve drainage and insulation qualities, therefore resulting in a longer service life for our roads. In addition, at the end of the project, ÉTS expects that integrating glass will help reduce greenhouse gas emissions generated during asphalt manufacturing. Those are only a few of the points currently under study by the ÉTS research team.

“The City of Montréal is pleased to cooperate with ÉTS in this applied research project to integrate recycled glass. Using post consumer materials as environmentally-friendly components to improve construction material performance is a priority for our Administration. Dealing with climate change and greenhouse gases requires a range of actions, and making new materials with recycled glass is a very promising avenue. We are proud to offer financial support and test slabs to try out these new materials,” remarked Lionel Perez, City of Montréal executive committee member in charge of infrastructures, the Commission des Services Électriques, governance and democracy and governmental relations.

ÉTS plans on testing its new asphalt mixes on Montréal test slabs in 2017.

# Itronics installs glass slag crusher

Itronics Inc., a growing and diversified fertilizer, silver and minerals producer, has completed installation and start up of a new glass slag crusher in Reno, Nevada. The company has also completed installation of a screening machine that will be used to size the crushed glass to meet specifications of the copper smelter to which the silver bearing glass will be sold. Completion of installation and start-up of these two machines finishes the silver refinery upgrade and provides the capacity needed to meet the refinery glass slag processing requirements.

The glass slag produced by the silver refinery contains a very small amount of silver which can be recovered by a copper smelter. The glass slag itself serves as a flux for copper smelting and is a significant benefit to the copper smelter.

“Addition of silver bearing glass slag sales provides a third revenue stream for the company,” said Dr. John Whitney, president. “The company will now be generating sales from GOLD’n GRO fertiliz-

ers, silver bullion and silver bearing glass. Addition of the new silver revenue streams will increase sales in coming years.” The Company made its first shipment of silver bullion produced by the new refining process in early October.

Due to limitations of the glass slag crusher, which was replaced, and previous lack of screening capability, the company has a backlog of glass that will be crushed and sized for shipment and sale. Itronics plans to process the uncrushed glass slag in the first quarter of 2016. After the backlog is processed, the refinery glass slag will be processed as it is produced and shipped to a smelter for sale.

The new glass crusher uses about the same amount of space as the crusher that is being replaced and provides a significant expansion of crushing capacity. The screening machine has high capacity, but is compact and has been installed in the same work area as the crusher. Each machine has a state of the art dust collection system to prevent dust emissions when they are being operated.

## METALS

# Aluminum can challenge collected over 193,000 pounds of beverage cans

Rexam’s North American Corporate Office in Chicago, Illinois, received top honors in the 2015 Great American Can Roundup (GACR) Industry Challenge by recycling more than 61,000 pounds of aluminum beverage cans.

The GACR Industry Challenge, sponsored by the Can Manufacturers Institute (CMI), collected and recycled 193,213 pounds of beverage cans, raising more than \$85,000 for local charities across the U.S.

Rexam’s recycling efforts raised nearly \$24,500 for local charities. As the winner, the company received an additional \$2,000 to donate to charity.

“The Great American Can Roundup recycling contest continues to be a great opportunity for our industry to show our local communities how easy it is to recycle and the inherent value in aluminum,” said Claude Marbach, president and chief executive officer, Rexam Beverage Can North America. “It is our pleasure to team with fellow can makers, suppliers and local charities to set a positive example in the communities we do business in. On behalf of the entire team at Rexam, I’d like to thank the manufacturing plant and office teams across our industry that participated this year and continue to position the aluminum beverage can as the most environmentally-friendly beverage package in the world.”

Second place honors went to Ball Corporation’s Findlay plant in Ohio. This plant recycled 38,364 pounds of aluminum beverage cans, equating to more than \$17,400 raised plus the \$1,000 prize money, all for donation to a charity of their choice.

Ball Corporation’s Rome plant in Georgia took third place by recycling 10,199 pounds of aluminum beverage cans and raising more than \$4,000 for charity.

CMI sponsors the GACR Industry Challenge annually to promote awareness around the environmental benefits of recycling aluminum cans. The 2015 Challenge involved more than 40 facilities, including plants and corporate offices.

Participating U.S. can manufacturers are Rexam BCNA, Crown Holdings, Inc. and Ball Corporation, as well as the two aluminum supplier companies, Novelis and Alcoa. The facilities partner together with their local schools, charities and other organizations to spread the recycling message and give back to their community.

Since its inception, the GACR Industry Challenge has recycled more than 7 million pounds of aluminum cans, equating to more than \$7 million raised for charities around the country.

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## METALS

# Steel imports increase

### U.S. IMPORTS OF FINISHED STEEL MILL PRODUCTS BY COUNTRY OF ORIGIN (Thousands of Net Tons)

	OCT 2015	SEP 2015	2014 Annual	2015 Annual Est.	% Change 2015 Annual vs. 2014
SOUTH KOREA	353	279	5,449	5,163	-5.2%
TURKEY	287	151	2,199	2,972	35.2%
CHINA	68	144	3,189	2,607	-18.2%
JAPAN	134	188	2,106	2,337	10.9%
GERMANY	88	162	1,278	1,563	22.3%
BRAZIL	143	110	1,188	1,491	84.0%
TAIWAN	130	67	17,531	1,314	10.6%
All Others	1,055	1,126	810	15,478	-11.7%
<b>TOTAL</b>	<b>2,258</b>	<b>2,226</b>	<b>33,751</b>	<b>32,925</b>	<b>-2.4%</b>

Based on preliminary Census Bureau data, the American Iron and Steel Institute (AISI) reported that the U.S. imported a total of 2,987,000 net tons (NT) of steel in October 2015, including 2,258,000 NT of finished steel (up 5.4 percent and 1.4 percent, respectively, vs. September final data). Year-to-date (YTD) thru 10 months of 2015 total and finished steel imports are 33,889,000 and 27,438,000 NT, respectively, down 8 percent and 2 percent respectively, vs. the same period in 2014. Finished steel import market share was an estimated 26 percent in October and is estimated at 30 percent YTD.

Key finished steel products with a significant import increase in October compared to September are reinforcing bars (up 97 percent), sheets and strip all other metallic coated (up 46 percent), heavy structural shapes (up 33 percent), wire rods (up 29 percent), and hot rolled

sheets (up 24 percent). Major products with significant YTD import increases vs. the same period last year include reinforcing bar (up 47 percent), line pipe (up 25 percent), standard pipe (up 20 percent), tin plate (up 12 percent) and wire drawn (up 10 percent).

In October, the largest volumes of finished steel imports from offshore were from South Korea (353,000 NT, up 27 percent vs. September final), Turkey (287,000 NT, up 90 percent), Brazil (143,000 NT, up 30 percent), Japan (134,000 NT, down 29 percent) and Taiwan (130,000 NT, up 94 percent). For ten months of 2015, the largest offshore suppliers were South Korea (4,302,000 NT, down 6 percent), Turkey (2,477,000 NT, up 36 percent), China (2,173,000 NT, down 20 percent), Japan (1,947,000 NT, up 10 percent) and Germany (1,302,000 NT, up 31 percent).

# AK Steel promotes executives

AK Steel's board of directors has approved the following executive promotions, which were effective January 1, 2016:

•Jaime Vasquez has been named vice president, finance and chief financial officer. Vasquez is currently director of finance. He will report to Roger K. Newport, who is currently executive vice president, finance and chief financial officer. Newport has been appointed chief executive officer and a member of the board of directors, also effective on January 1, 2016.

•Gregory A. Hoffbauer has been named vice president, controller and chief accounting officer. He will also assume oversight of risk management. Hoffbauer is currently controller and chief accounting officer.

•David E. Westcott has been named vice president and treasurer. He will assume responsibility for information technology. Westcott is currently treasurer.

Vasquez joined AK Steel in 2014 as director, finance with 30 years of finance, investor relations and sales management experience. Prior to joining AK Steel, he was vice president, chief financial officer for the Performance Engineered Products Group of Carpenter Technology Corporation, a specialty metals manufacturer. From 2001 to 2014 he served Carpenter Technology Corporation in positions including vice president, corporate development; president, Asia Pacific; and vice president, treasurer and

investor relations. He also served as a member of the board of directors of Kalyani-Carpenter Special Steels Limited.

Hoffbauer joined AK Steel in 2011 as assistant controller. He was named controller and chief accounting officer in 2013. Prior to joining AK Steel, he was director of accounting for NewPage Corporation. He served in a variety of accounting positions for Deloitte & Touche. He was also controller for Day International, Inc.

He is a member of the board of trustees of the Dayton chapter of Financial Executives International. He is a Certified Public Accountant and a member of the American Institute of Certified Public Accountants and the Ohio Society of Certified Public Accountants. He also serves on the board of trustees of the Dayton Society of Natural History.

Westcott joined the company in 1980 as an associate accountant. He advanced to accountant and senior accountant and transferred to the Treasury Department in 1989.

He was named supervisor, accounting services in 1994. He progressed through a number of assignments including senior administrator, financial planning, and systems manager and supervisor, accounts payable for the financial planning and analysis department. In 2001, he was named manager, treasury operations. He advanced to assistant treasurer in 2004, and he was named treasurer in 2005.

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# METALS

## Steel import permit applications decrease in November 2015

Based on the Commerce Department's most recent Steel Import Monitoring and Analysis (SIMA) data, the American Iron and Steel Institute (AISI) reported that steel import permit applications for the month of November total 2,647,000 net tons (NT). This was a 24 percent decrease from the 3,473,000 permit tons recorded in October and a 13 percent decrease from the October final imports total of 3,041,000 NT. Import permit tonnage for finished steel in November was 2,098,000, down 8 percent from the final imports total of 2,275,000 in October.

For the first 11 months of 2015 (including November SIMA and October final), total and finished steel imports were 36,590,000 NT and 29,553,000 NT, respectively, down 10 percent and 4 percent from the same period in 2014. The estimated finished steel import market share in November was 26 percent and is 29 percent year-to-date (YTD).

Finished steel imports with large increases in November permits vs. the October final included bars light shapes (up 199 percent), cut lengths plates (up 111 percent), structural pipe and tubing (up 42 percent) and plates in coils (up 37 percent). Products with significant YTD increases vs. the same period in 2014 include reinforcing bar (up 41 percent), standard pipe (up 18 percent), line pipe (up 17 percent) and wire drawn (up 11 percent).

In November, the largest finished steel import permit applications for off-shore countries were for South Korea (330,000 NT, down 7 percent from October final), Japan (213,000 NT up 56 percent), Turkey (201,000 NT, down 32 percent) and China (112,000 NT, up 63 percent). Through the first eleven months of 2015, the largest offshore suppliers were South Korea (4,634,000 NT, down 8 percent from 2014), Turkey (2,686,000 NT, up 32 percent) and China (2,286,000, down 23 percent).

## 75,000 refrigerators recycled

Mass Save Eversource, Cape Light Compact, National Grid and Unitil reached a milestone – 75,000 refrigerators recycled through a recycling program and energy savings initiative.

In recycling 75,000 refrigerators and freezers, Mass Save and Massachusetts residents have reclaimed up to 1,875,000 pounds of plastic, 75,000 pounds of insulating foam and 224,000 pounds of metal. The reduction in energy use could save up to 105 million kilowatt-hours annually.

The Mass Save refrigerator recycling program encourages customers to reduce their energy use by recycling old refrigerators and freezers. The program offers free pickup of refrigerators and freezers and a \$50 reward.

Recycled, up to 95 percent of the refrigerator's components (including metal, plastic, glass and oil) can be reclaimed for reuse in manufacturing new products or incinerated to generate electricity, while any remaining harmful materials can be safely disposed.

## Aluminum Association notes industry's safest year ever

Bureau of Labor Statistics shows 17 percent drop in recordable incidents in 2014

2014 was the safest year on record for the U.S. aluminum industry, according to recently released data from the U.S. Bureau of Labor Statistics. The report – the BLS Workplace Injury and Illness Summary – showed that the number of recordable workplace safety incidents in the aluminum industry fell to their lowest level since tracking began in the current system in 1994. Recordable incidents declined 17 percent year-over-year in 2014 to a rate of 3.4 per 100 full-time employees while DART (days away from work, restricted, or transferred) cases similarly dropped 16 percent to 2.1 recordable incidents per 100 full time employees that resulted in lost or restricted days or job transfer. Both of these rates surpassed the performance of U.S. manufacturing as a whole which averaged a 4.0 recordable incident rate and 2.2 DART rate in 2014.

These improvements are the continuation of a trend – recordable incidents in the aluminum industry have declined by 48 percent since 2003 and the industry's DART rate has dropped by 43 percent over that same period. While the Association recognizes that any incident or injury is one too many, the tremendous improvements made by

the industry to date are being used as a foundation upon which to drive further improvements on the goal to zero.

The Aluminum Association has a long standing commitment to industry safety and supports a variety of programs to help maintain the safety of aluminum industry employees. Over the past 22 years, the Aluminum Association's biannual Casthouse Safety Workshop series has trained more than 3,000 aluminum workers on hazard mitigation in the casthouse setting. In 2015, the Association trained more than 180 participants from more than 50 companies – a single-year record.

In addition to sponsoring worker training and extensive research on worker protection and related issues, the Aluminum Association also releases an annual Molten Metal Incident Report to highlight information on hazardous events that occur at facilities melting aluminum. The report is the product of a voluntary program started in 1983 to share safety information among facilities. Although not intended to be statistically representative of the entire industry, the report provides useful information to help guide safety efforts in molten aluminum environments.

### AR Scrap Metals MarketWatch



Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
#1 Bushelings	per gross ton	\$148.00	\$147.00	\$149.00	\$165.00	\$170.00
#1 Bundles	per gross ton	146.00	147.00	149.00	170.00	165.00
Plate and Structural	per gross ton	155.00	155.00	171.00	185.00	185.00
#1 & 2 Mixed Steel	per gross ton	160.00	160.00	149.00	155.00	150.00
Shredder Bundles (tin)	per gross ton	98.00	99.00	98.00	123.00	135.00
Crushed Auto Bodies	per gross ton	100.00	104.00	98.00	123.00	135.00
Steel Turnings	per gross ton	79.00	77.00	73.00	80.00	99.00
#1 Copper	per pound	1.98	1.86	1.90	1.95	1.98
#2 Copper	per pound	1.80	1.75	1.81	1.70	1.72
Aluminum Cans	per pound	.58	.50	.50	.50	.50
Auto Radiators	per pound	1.30	1.39	1.38	1.40	1.29
Aluminum Core Radiators	per pound	.40	.47	.49	.47	.47
Heater Cores	per pound	.94	.98	.99	1.00	1.05
Stainless Steel	per pound	.43	.43	.42	.36	.40

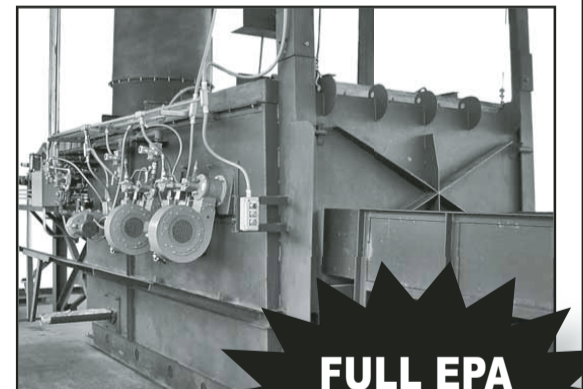
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**DISCLAIMER:** American Recycler (AR) collects pricing and other information from experienced buyers, sellers and facilitators of scrap metal transactions throughout the industry. All figures are believed to be reliable and represent approximate pricing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

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## Tools for success – an ongoing series

### Never forget that the customer is king

Carl Sewell says, “Customers are for life!”

The first article in this series listed more than 25 tactics to increase your business success. I have used all of these tactics in my business career. I started with nothing and didn't go to college, so I know you can achieve maximum success, regardless of your level of education or circumstances.

Never forget the value of a customer. Certainly, a time comes in every business when you need to fire a customer. Here are some reasons I have had for doing so: They would not pay me; they were threatening an employee; or they were unprofessional.

Whenever you have to fire a customer, you always want to consider how parting company might affect you. Will you ever encounter them again? How will they take being fired? Are they so vindictive that they may try to harm your reputation online or with other clients? When you have to fire a customer, do it after having thought it out carefully.

One of my favorite books about the positive side of keeping customers is Carl Sewell's Customers for Life. Every business owner should read it and make sure every sales and service employee they have reads it.

My girlfriend Linda understands that business is about customer relationships. She has been with State Farm Insurance for more than 20 years and has been a State Farm Agent in Fort Worth for six years. Two times a week, a current client comes to her office and tells her that they intend to move their business to another carrier because of price. She is never defensive, always kind, empathetic and professional.

Linda listens carefully and is often able to keep those customers because she treats them with kindness and courtesy. By listening and empathizing, Linda is often able to get a client to sit down with her to compare the coverages and learn about the differences that produce the savings. Many appreciate that kind of service and decide to stay.

When she does lose a customer, Linda always asks for the opportunity to quote when they are up for renewal and some come back to her because she demonstrates that her interest in clients goes far beyond a transaction. Rate is just one of many factors when people choose to do business with her.

It's also about the quality of service they get.

Good service is rarer than it should be. I recently had a disagreement with a service company. The service rep responded to my complaint by telling me that no one else ever complained about their service. The implication was that I was being unreasonable.

Even if I were being unreasonable, what is the upside of responding to a complaint in a way that implies the fault is with the client? They told me that I was 100 percent wrong (there's always a second side to every story), and even said I was “spoiled.” Even if I were, what did they gain by making the point, except my anger?

Then, they told me that I couldn't find anyone with their credentials and quality to do that job at the price I wanted. Ironically, they are a new business in a crowded niche. New or established, never be so pompous or naïve as to think you are the only one who can do the job. Then they wanted to discuss all that they did right on the job, rather than discussing the mistake or problem. Again, that isn't going to repair the relationship or keep the customer. Imagine your son telling you how he made almost all Bs as a defense when you confront him about a D on his report card.

I fired them very graciously. I promptly hired someone else to do the work. My new vendor is doing a better job for less money. Even though I liked the old vendor, they did not value the relationship with me or did not understand the basics of customer service, and acted on emotion when challenged. Worse still, they did not learn anything that might improve their service from losing my business.

I teach the client service employees at my companies to deal with customers by listening, empathizing, and acting to correct the issue. We spell out the steps that we will take to fix the issue and ensure that it does not happen again. We apologize and we fix it. We're about solutions that are win-win and strengthen the relationship with that customer.

Don't get caught up in thinking about one transaction. Keep your eye on the lifetime value of the customer whose issue you need to solve. What is all of his or her future business worth? What are the referrals that he or she could send you worth? Think lifetime value, not single transaction, and you will find it gets easier to keep customers for life.

**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.*

## AUTOMOTIVE

# KAR Auction Services reports growth in revenues Board to pay quarterly dividend

KAR Auction Services, Inc. (reported its third quarter financial results for the three months ended September 30, 2015. For the third quarter of 2015, the company reported revenue of \$666.7 million as compared with revenue of \$589.1 million for the third quarter of 2014, an increase of 13 percent. Adjusted EBITDA for the quarter ended September 30, 2015 increased 9 percent to \$163.1 million, as compared with Adjusted EBITDA of \$149.1 million for the quarter ended September 30, 2014. Net income for the third quarter of 2015 increased 10 percent to \$52.3 million, or \$0.37 per diluted share, as compared with net income of \$47.5 million, or \$0.33 per diluted share, in the third quarter of 2014. Adjusted net income per diluted share for the quarter ended September 30, 2015 increased 5 percent to \$0.42 versus adjusted net income per diluted share of \$0.40 for the quarter ended September 30, 2014. For the quarter ended September 30, 2015, fluctuations in the Canadian exchange rate negatively impacted revenue by \$15.2 million, Adjusted EBITDA by \$6.0 million and adjusted net income by \$3.0 million, or \$0.02 per diluted share.

For the 9 months ended September 30, 2015, the company reported revenue of \$1,957.4 million as compared with revenue of \$1,758.5 million for the nine months ended September 30, 2014, an

increase of 11 percent. Adjusted EBITDA for the nine months ended September 30, 2015 increased 10 percent to \$495.3 million, as compared with Adjusted EBITDA of \$450.3 million for the nine months ended September 30, 2014. Net income for the first nine months of 2015 increased 40 percent to \$166.3 million, or \$1.16 per diluted share, as compared with net income of \$119.0 million, or \$0.84 per diluted share in the first nine months of 2014. Net income for the nine months ended September 30, 2014 was negatively impacted by \$19.2 million (\$0.14 per diluted share) resulting from the company's refinancing activities. Adjusted net income per diluted share for the nine months ended September 30, 2015 increased 7 percent to \$1.30 versus adjusted net income per diluted share of \$1.22 for the nine months ended September 30, 2014. For the nine months ended September 30, 2015, fluctuations in the Canadian exchange rate negatively impacted revenue by \$34.9 million, Adjusted EBITDA by \$13.2 million and adjusted net income by \$6.5 million, or \$0.05 per diluted share.

The company also disclosed a cash dividend of \$0.27 per share on the company's common stock. The dividend is payable on January 7, 2016, to stockholders of record as of the close of business on December 22, 2015.

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**AUTOMOTIVE**

# Trucking company held accountable in California

The U.S. Environmental Protection Agency released that Estes Express Lines will pay a \$100,000 penalty for violations of the California Truck and Bus Regulation, for failing to install particulate filters on 73 of its heavy duty diesel trucks.

The California Truck and Bus Regulation was adopted into federal Clean Air Act plan requirements in 2012 and apply to privately owned diesel trucks and buses. The rule also requires any trucking company to ensure their subcontractors are only using compliant trucks, and requires companies to upgrade their vehicles to meet specific NOx and PM2.5 performance standards in California. Heavy duty diesel trucks in California must meet 2010 engine emissions levels or use diesel particulate filters.

In addition to the penalty, Estes will spend \$290,400 towards projects to educate the out of state trucking industry on the regulation and for replacing old wood

burning devices in the San Joaquin Valley. Estes will pay \$35,000 to the University of California Davis Extension to implement a state approved training program for out of state trucking firms on compliance with the rule. Estes will also pay \$255,400 to the San Joaquin Valley Air Pollution Control District's Burn Cleaner Incentive Program that will be used to replace 80 or more wood burning devices with cleaner versions.

Estes is a large, private, for-hire trucking firm based in Virginia that owns and operates diesel fueled vehicles in all 50 states. In February 2015, EPA issued a Notice of Violation to Estes after EPA's investigation found that the company failed to equip its heavy duty diesel vehicles with particulate filters and failed to verify compliance with the Truck and Bus Regulation for its hired motor carriers. Estes now operates only new trucks in California.

# Carbon fiber and plastics drive automotive innovation

According to the U.S. Department of Energy, automobile components made with advanced composite materials could reduce the weight of passenger cars by half and improve fuel efficiency by nearly 35 percent. That's one of the primary reasons that automakers are ramping up use of composite auto parts made with carbon fiber-reinforced plastics (CFRP) in their vehicles.

The growing trend toward "lightweighting" vehicles through use of lighter, advanced materials such as CFRP is driven in large part by the Corporate Average Fuel Economy fuel efficiency standards mandating 54.5 miles per gallon for auto fleets by 2025. In addition, buyers of new vehicles say fuel economy remains the most influential factor in determining

which vehicle they select, according to a survey by J.D. Power.

CFRP are both lightweight and especially strong, up to 10 times stronger than steel, 50 percent lighter than steel and 30 percent lighter than aluminum.

"The combination of carbon fiber and lightweight plastics creates an advanced composite matrix, something much tougher than either material could be on its own," said Steve Russell, vice president of plastics for the American Chemistry Council, which sponsors the Plastics Make it Possible® initiative.

In addition to improved fuel efficiency, CFRP components can contribute to safety since they can absorb up to 12 times more crash energy than steel.

# Association alerts Congress to anti-competitive impact of bill

The Auto Care Association, based in Bethesda, Maryland with over 3,000 member companies, sent a letter to the U.S. House of Representatives subcommittee, warning that provisions in draft vehicle cybersecurity legislation could allow car companies to take "full control over who has access to key vehicle systems, many of which are needed for repair purposes." The letter further stated that, "such action could have severe anti-competitive impacts on our industry and car owners who depend on independent repair shops for about 80 percent of post-warranty repairs."

The provision in question was included in a "Discussion Draft to Provide Greater Transparency, Accountability and Safety Authority to the National Highway Traffic Safety Administration," issued by the Subcommittee on Commerce, Manufacturing and Trade of the House Energy

and Commerce Committee. The provision would make it "unlawful for any person to access, without authorization, an electronic unit (ECU) or critical system of a motor vehicle or other system containing driving data for such motor vehicles, either wirelessly or through a wired connection."

In the letter, the association called the provision vague, citing that the ECU is the brain of the vehicle and that shops need access to the ECU in order to provide diagnosis and repair for a vehicle. "The Auto Care Association believes that when a consumer purchases a vehicle, they own not only the sheet metal and mechanical parts, but the software as well. While the design of the software might be the property of the developer, ownership and the access to that software should be controlled by the owner of that vehicle and not by the vehicle manufacturer."

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## BUSINESS BRIEFS

### Harris Equipment makes personnel changes

■ Mary Johnson has been named general manager, Baxley, Georgia operation for The Harris Waste Management Group, Inc. Johnson has been an employee of Harris for 22 years and has worked for Harris in a number of capacities such as inside sales manager, shipping manager and national accounts sales manager.

Blake Brown has been named the southeast regional sales manager for Harris Waste. Brown's territory includes the states of Florida, Georgia, South Carolina, Tennessee, Mississippi, Louisiana, Arkansas, Southern Illinois, Southern Iowa, Missouri, Kansas, Oklahoma, Texas and New Mexico.

Brown was formerly in sales and marketing at OmniSource, Fitzgerald, Georgia. While at OmniSource, he was responsible for marketing, procurement and customer relations. Prior to that Brown was general manager of Shapiro Metals, located in Fitzgerald, Georgia.

### Gates elected to Design-Build Institute board

■ Brown and Caldwell, an environmental engineering and construction firm, announced that senior vice president Steve Gates has been chosen by the Design-Build Institute of America's nominating committee to serve on the organization's national board of directors for 2016.

Gates, responsible for design-build project development firm-wide for Brown and Caldwell, is a 38 year industry veteran in program, design and construction management roles. A nationally-recognized expert in integrated project delivery, he has successfully managed the delivery of environmental facilities valued well over \$4 billion for major public utilities and Fortune 1000 clients, using program management, partnering and design-build contracting, as an engineer, a contractor and an owner's advisor.

Gates, who works out of Brown and Caldwell's Boston office, assumed his post January 1. The board of directors is comprised of owners, engineers, design-build construction contractors, architects, specialty trade contractors and other professionals to reflect DBIA's growing community. Gates also serves on the board of directors for the Water Design-Build Council.

### Swarthout Recycling celebrates 25 years

■ Swarthout Recycling has reached its 25th consecutive year of service in the upstate region of New York.

Swarthout Recycling started 25 years ago as a scrap steel business and has since expanded to include glass, cardboard, tin, plastic and paper. A fleet of 10 trucks deliver 500 roll off containers for commercial, municipal, industrial and residential use. In the past five years, Swarthout started collection trash strictly on a commercial basis.

### Caterpillar forms marketing agreement with Lefort

■ Caterpillar Inc. and Lefort North America LLC have entered into an exclusive marketing agreement for supply of Lefort hydraulic shears and balers commonly used in scrap metal recycling. The Lefort products, available in stationary and portable versions, will be sold and supported exclusively by Cat® Dealers in the U.S. and Canada.

The vision for this agreement is to combine the strength of Caterpillar's distribution network with Lefort's innovative design and precision engineered products.

Founded in 1947, Lefort manufactures machines in their Belgium factories using state-of-the art engineering and design methods. Lefort's North American headquarters is located in West Palm Beach, Florida. This location is also the parts distribution center dedicated to the U.S. and Canada.

### Terramac appoints Bobcat of St. Louis as dealer

■ Terramac, a manufacturer of rubber track crawler carriers, expanded its representation in the North American market to include Bobcat of St. Louis as part of its dealer network. Bobcat of St. Louis will represent the versatile Terramac product line across designated regions of Illinois, Indiana, Missouri, Kentucky and Tennessee.

Bobcat of St. Louis will offer the Terramac RT9 and RT14 crawler carrier units to serve a variety of industries including pipeline, utility, general construction, environmental and mining. In addition to a standard convertible dump to flat bed or rock dump bed, Bobcat of St. Louis will also offer a wide range of customizable support attachments, which Terramac units are designed to accommodate, such as: bark blowers, hydroseeders, cranes, drills, generators and tanks. The team at Bobcat of St. Louis will provide professional sales, rental and support on the Terramac product line from their eight locations across Missouri, Illinois, Indiana, Kentucky and Tennessee.

Bobcat of St. Louis is an equipment provider with over 25 years of experience serving the construction, rental, landscaping, agriculture, grounds maintenance, government, utility, industrial and mining markets.

### Newalta declares quarterly dividend for common stock

■ Newalta Corporation has declared a quarterly cash dividend of \$0.0625 per common share for the fourth quarter of 2015, payable on January 15, 2016 to all shareholders of record on December 31, 2015. The ex-dividend date is December 29, 2015.

Newalta expects that the dividends will be "eligible dividends" for income tax purposes and thus qualify for the enhanced gross-up and tax credit regime for certain shareholders.

### Stephen Simmons joins GBB as vice president

■ Gershman, Brickner & Bratton, Inc. (GBB) disclosed that Stephen Simmons has joined the firm as Vice President. Formerly a GBB Principal Associate in 2012 and 2013, he is a sustainable development business leader with more than 30 years of experience in the energy and environmental services sectors. Having worked with leading international energy operating companies and engineering / consulting firms, he is highly experienced in program and project management, new business development, waste and power marketing, technology evaluation, business financial modeling, profit and loss management, facility design, procurement and construction.

Simmons was most recently Fuel Sourcing Manager at Evergreen Community Power, a 25 MW combined heat and power facility fueled with waste-derived biomass. At Plasco Energy Group, which focuses on creating renewable energy from municipal solid waste using a plasma gasification process, he led project development efforts in the United States and Caribbean Basin which included preparing market studies, leading contract negotiations, and managing the regulatory approval process. As vice president, business development, of ADAGE LLC, he was part of a team that developed facilities converting forestry waste into clean renewable energy. He also directed the commercial development, site selection, feedstock supply, and off-take agreements for Lozonoco, Inc., a biofuels start up.

As founding and managing member of Mainland Technologies, an energy environmental consulting firm, he provided business development, project management, and acquisition services for four years. Early in his career, he spent over 15 years as business project manager for American Ref Fuel Company, now Covanta. He was responsible for directing business development efforts, managing waste and energy revenue generation, and implementing public and community affairs programs throughout the mid-Atlantic region. He also led project teams conducting acquisition due diligence, facility design, and construction in the energy from waste industry.

### MASABA Mining Equipment appoints new president

■ Masaba Mining Equipment, a manufacturer of bulk handling equipment, has named James R. Peterson president.

Peterson has worked in sales and marketing at Masaba the past seven years. His most recent experience prior to joining Masaba was business owner and president of Canica-Jaques VSI Crushers.

Peterson holds a MBA from Mississippi State University and a Bachelor's Degree in Finance from Marquette University.

### ParkerGale acquires OnePlus Corporation

■ ParkerGale Capital, LP has acquired OnePlus Corporation, a leader in waste compactor automated monitoring systems.

Founded in 1989, OnePlus has enabled users of large industrial waste compactors, such as commercial property owners, retailers and government agencies, to lower their waste removal costs. Specifically, the company's patented sensor technology monitors how full a compactor is and alerts both the waste hauler and property owner when it's time for a pickup. With this technology, OnePlus is helping companies such as Lowe's, Home Depot, United States Postal Service, Hyatt Hotels and Amazon save millions a year in waste removal fees, while helping waste haulers like Republic Services and Advanced Disposal to more efficiently manage their fleets and bring additional value to their clients.

Upon closing, Klaus Voss, a veteran environmental technology and real estate executive with more than 20 years of experience, was named chief executive officer of OnePlus.

In addition to Voss, ParkerGale also brought on the former chief financial officer of Edline (acquired by Blackboard), Jay Alter, as chief financial officer to help OnePlus improve its systems and facilitate future acquisitions.

### ADVERTISER INDEX

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## BUSINESS BRIEFS

### EnergySolutions to acquire Waste Control Specialists

■ EnergySolutions, Inc. has signed a definitive agreement to acquire Waste Control Specialists LLC (WCS), a wholly owned subsidiary of Valhi, Inc. and operator of a waste disposal facility located in Andrews County, Texas.

At closing, EnergySolutions will pay \$270 million in cash, \$20 million face amount in Series A Preferred Stock and will assume approximately \$77 million of WCS debt. Additionally, EnergySolutions will assume all financial assurance obligations related to the WCS business.

Completion of the sale is subject to certain customary closing conditions outlined in the transaction agreement.

EnergySolutions and WCS will continue to operate as independent companies until completion of the sale.

### National Recycling Coalition elects officers

■ The National Recycling Coalition (NRC) has voted on new officers for the 2015-2016 year.

Elections for officers were held during the winter board meeting on December 10, 2015 in Brooklyn, New York. The new officers, listed below, will serve for the next year:

•President: Bob Gedert, Department director, Austin Resource Recovery, City of Austin.

•Chair of the board: Julie L Rhodes, president, Julie L Rhodes Consulting.

•Executive vice president/chief executive officer: Marjorie Griek.

•Additional Vice presidents: Gary Bilbro, owner and president, SMART Recycling U.S., Inc. and Stephen Bantillo, executive director, Recycling Certification Institute.

•Secretary: Gary Liss, president, Gary Liss & Associates.

•Treasurer: Julie L Rhodes, president, Julie L Rhodes Consulting.

•At-large executive committee members: George Dreckmann, Strategic Initiatives coordinator, City of Madison, Wisconsin Streets Division, Will Sagar, executive director, Southeast Recycling Development Council, and Fran McPoland, government relations and environmental advisor, Paper Recycling Coalition & 100 percent Recycled Paperboard Alliance.

### ASA Electronics names public relations specialist

■ ASA Electronics has hired Hannah Birong as their public relations specialist. Birong oversees content creation as well as public relations for ASA Electronics' various industries and proprietary brands. Her position includes a range of media relations, advertising planning, social media management and web marketing.

Birong holds a B.A. in Mass Communications with a concentration in Journalism and a minor in Graphic Design from Indiana University South Bend.

### Danieli Centro Recycling Canadian renovation set

■ Danieli Centro Recycling (DCR) has entered into a contract to upgrade Gerdau Whitby's nonferrous plant.

The upgraded plant will lead to an increase in both the purity and volume of nonferrous metal recovery, and allow the South American steel giant to expand its Ontario operation to recover precious metals from landfilled automotive shredder residue (ASR).

Whitby mill is 1 of 3 Gerdau mills operating in Canada, and employs around 385 people. In 2014, the mill celebrated its 50th year and followed celebrations with a series of improvements which include the installation of the new Danieli Centro Recycling sorting plant.

For DCR, this project demonstrates their focus and commitment to grow in this market and become one of the leading players in the recycling business.

### Gershow Recycling hosts tour for recycling officials

■ Kevin Gershowitz, President, Gershow Recycling, led the members of the Association of Long Island Recycling Officials (ALIRO) on a tour of its Medford facility. During the tour, Gershowitz gave a history of the company, what the company does, the types of metal that Gershow recycles and the processes by which they are each recycled.

Additionally, ALIRO members had the opportunity to view the machinery that is used to shred and separate the metals, and take out non-metallic materials from the scrap products. Gershowitz also guided the attendees through the sorting process showed the end results of the recycled products. The tour concluded with a question and answer period between Gershowitz and the ALIRO members.

Gershow Recycling has nine locations in Brooklyn, New Hyde Park, Valley Stream, Freeport, Lindenhurst, Huntington Station, Bay Shore, Medford and Riverhead.

### Bridgestone names retread director of operations

■ Bridgestone Americas recently appointed Gary Nye as director of operations for the company's Bandag retread business. In this role, Nye will lead and develop the operational strategy for the Bandag brand to enhance franchise operations in the U.S. and globally. Additionally, he will work closely with the Bridgestone commercial truck and bus tire team to bring greater operational alignment across the Bridgestone Commercial division.

Most recently, Nye served as senior business operations team leader at Mars Petcare North America, where he successfully led the operational integration of the Mars Petcare Pet Specialty, Petcare P&G and Mars Petcare U.S. divisions. Prior to joining Mars Petcare, Nye spent eight years at Ford Motor Company, with four of those years as a Global Launch Strategy Engineer.

### ICE Recycling invests in new hybrid baling system

■ ICE Recycling LLC., a Leigh Fibers Company, recently invested over one million dollars in a new custom baling system, along with electrical supply upgrades at its Lake City facility. The baling system was manufactured by the International Baler Co. of Jacksonville, Florida and was supplied and installed by Recycling Equipment Inc. of Newton, North Carolina. The custom installation was specifically designed for ICE to bale core tubes, along with conventional recyclables to increase their present capacity.

The baler is a hybrid designed with a modified charge box that increases the density of the bales produced from the standard 1,250 lb. bales to more than 1,400 lbs. per bale. This customization allows for an additional 8,000 lbs. of material to ship in an export container.

ICE Recycling reprocesses post-industrial polymers, cardboard, paper and metals for companies throughout the Southeast and Mid-Atlantic. The company provides both on-site waste stream management as well as off-site reprocessing services.

*Two friends met on the street and exchanged greetings.*

*"It was very cold this morning!"*

*"How cold was it?"*

*"I don't know the exact temperature, but it was so cold, I saw a lawyer with his hands in his own pockets."*

### Toter adds director and regional sales managers

■ Toter®, a manufacturer of two wheel carts for curbside collection of waste, recycling and organics, disclosed additions to its residential sales team.

Derrick Masimer will take over as director of sales for Toter's Eastern division, and Stephanie McAllister has joined as regional sales manager for the Southeast, Bahamas and Caribbean regions. Both will be tasked with growing sales in Toter's residential channel, specifically with municipalities and private waste haulers.

As director of sales, Masimer will support Toter's four regional sales team members in the Eastern division. He began his career with Wastequip in 2007, and has held numerous positions including director of dealer sales and customer support for Wastequip's compactors business, and director of sales for the technical products division where he was responsible for sales of Wastequip compactors and balers. Prior to Wastequip, Derrick served as regional sales manager for Marathon Equipment Company, and Territory manager for both Waste Management and Allied Waste Industries.

McAllister joined Toter in June 2015 as a regional sales associate. In her new role as regional sales manager, she will focus on growing Toter's residential carts business. McAllister's responsibility for Toter's Southeast region includes Florida, the Bahamas and the Caribbean. Her prior experience includes management of donor relations and fundraising activities for the University of Utah Athletic Department.

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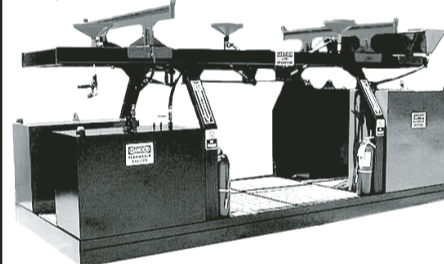
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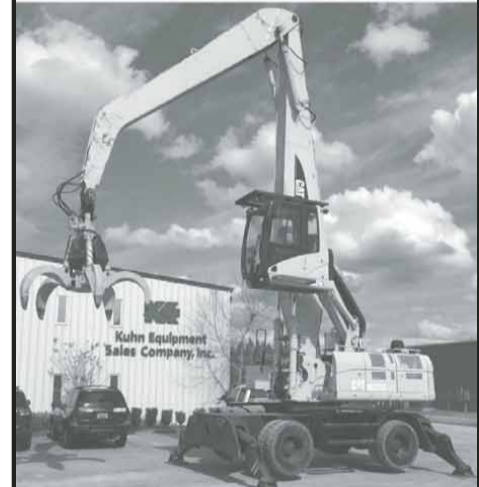
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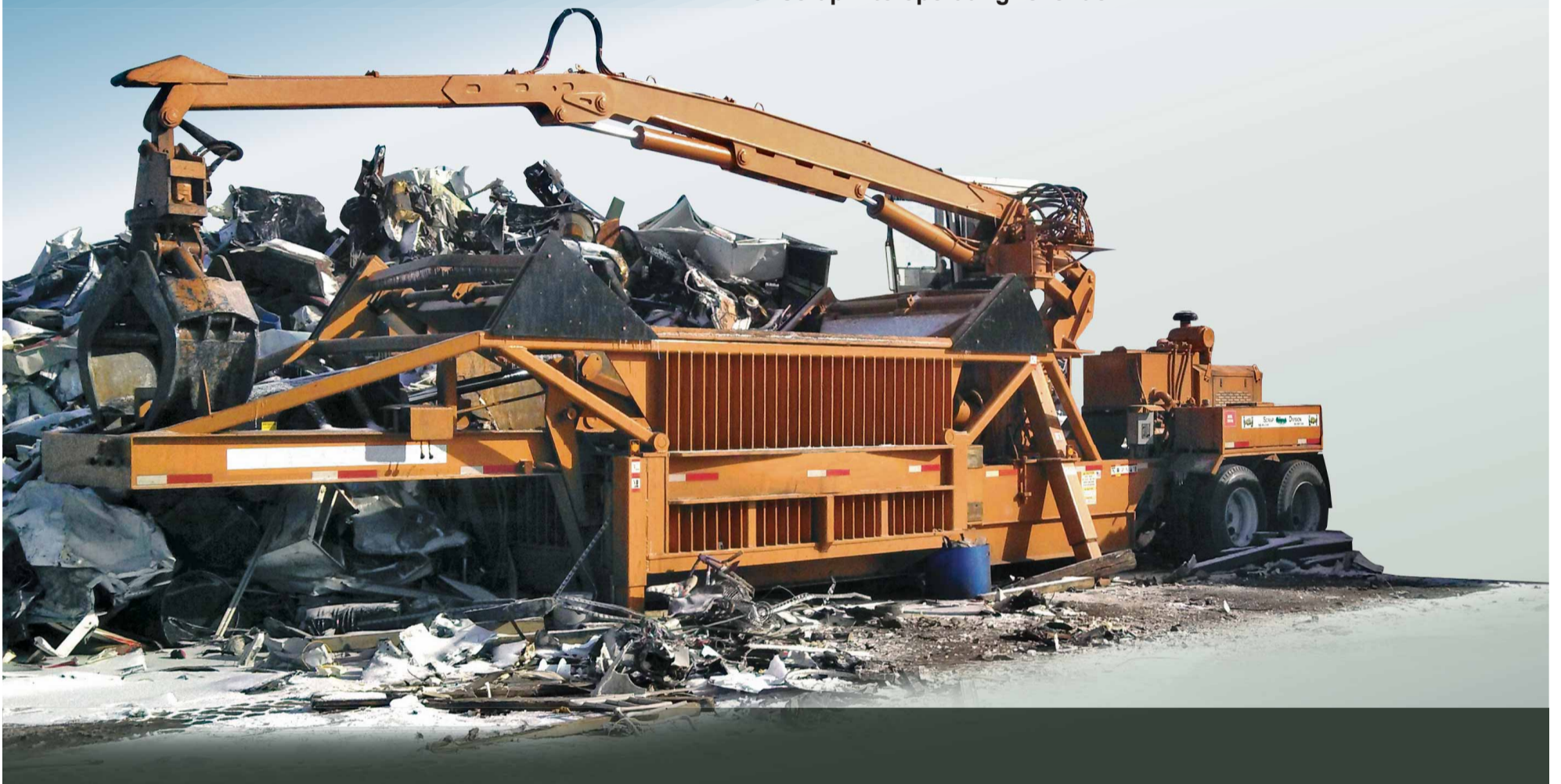
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## Municipal collection of organics increases

by MIKE BRESLIN

mbreslin@americanrecycler.com

Surely the oldest form of recycling is organics recycling. Prehistoric farmers quickly realized that adding food scraps and other carbon based materials to soils resulted in more productive crops.

Today, more Americans than ever before are also becoming aware of the many positive benefits of organic recycling, not only for soil enrichment but also to divert materials from landfills as well as provide feedstock for energy production. In a more sustainable and green conscious society, states, cities and towns are supporting laws and regulations to promote the capture of these carbon rich materials, which are becoming recognized as too beneficial to waste.

That's why more and more municipal solid waste (MSW) authorities are establishing organic residential and commercial collection and drop-off programs – many geared to reach state recycling mandates and some including targets for organics.

One of the most recent is a voluntary, residential food scrap collection program instituted by the Minneapolis Solid Waste & Recycling Division of Public Works. Minneapolis, the largest city in Minnesota, has over 400,000 residents and along with its twin-city Saint Paul comprises the second largest economic center in the Midwest, behind Chicago. Minnesota is fairly advanced when it comes to organics collection. Many small communities have been doing it for decades.

Overall, composting has come a long way. A study done in 2013 by the United States Composting Council (USCC) identified 3,600 compost manufacturing facilities in the U.S. There is only information on approximately 65 percent of these facilities. Of those,



City of Minneapolis collection bins, left to right: 32 gallon organics, 96 gallon commingled, 32 gallon trash. PHOTOS COURTESY OF MINNEAPOLIS SOLID WASTE & RECYCLING DIVISION OF PUBLIC WORKS

nearly 14 percent accepted food residuals at that time (prior to diversion laws in several states and large cities) and about 7 percent accepted biosolids, or sewage sludge. The remainder accepted yard and vegetative waste.

A survey conducted in 2014 by BioCycle, the official magazine of the USCC, identified 198 U.S. communities with curbside collection of food scraps, representing 2.74 million households in 19 states. While organics collection has enjoyed steady growth, the enthusiasm for food scraps collection exceeds the progress shown in that data. Dozens more municipalities have formalized drop-off programs for residential food

scraps, and entrepreneurs offer curbside subscription services in communities across the country, some of which have grown large, up to 4,000 households.

Dave Herberholz, director of solid waste and recycling for the City of Minneapolis shared how the new organics program is progressing.

"It's purely a voluntary program, but everyone is paying for it through our base collection fee," said Herberholz. "All residents pay for it whether they participate or not. In order to participate residents have to sign-up, or opt-in. So far we've rolled it out to about 25 percent of the city in Phase 1. Currently, fewer than 32 percent of all residents have signed up."

"A little over two years ago we went from a multi-sort recycling program to a one-sort program. That's when we got out of a very demanding, multiple bin and bag separation of items at the curb or alley and went to a 96 gallon rolling cart for all recyclables. It upped our recycling participation and volume by 50 percent or so. Over overall recycling rate is about 35 percent."

"We commissioned a study to look at different options and methods for organic collection to expand our pilot organics program citywide. When that study was completed we evaluated it in context with our infrastructure and went with a dedicated cart and source-separated approach rather than commingling or co-collecting with MSW or yard waste. That was predicated on not having the processing facilities to sort co-collected materials. We collect yard and

vegetative waste separately from April through Thanksgiving. But our organics program is weekly collection, year round."

Herberholz explained that his city began by doing a pilot organic program in 2008, which was expanded in 2010. By the time the Phase 1 of city-wide program began rolling out in August 2015 approximately five percent of the residents in the city and suburbs were already involved in the program. Minneapolis Solid Waste & Recycling is responsible for residential properties of four units or less. It does not handle large commercial customers; however a few hundred small, commercial accounts without dumpsters are eligible to participate in the organics collection program.

Minneapolis now uses two different sized wheeled carts for organic collection. The pilot program employed 65 gallon, green plastic vented containers designed for organics. For many applications it was found to be too large. For the new weekly collection, about 90 percent of customers will have unvented 32 gallon wheeled carts. If, over time, a customer needs the larger cart, it will be provided. The maximum weight for an organics recycling cart and its contents is 200 pounds. Properties with 2 or fewer dwelling units are provided with the smaller, 32-gallon, recycling cart. Properties with more than 2 dwelling units get a 64 gallon cart. Damaged carts are repaired or replaced by the city.

Customers are able to recycle fruits, vegetables, bones, meat, breads, eggshells and other food scraps. A dedicated website ([www.minneapolismn.gov/organics](http://www.minneapolismn.gov/organics)) details how and what organics can and cannot be recycled in several languages. Residents who do not sign up for collection, or do not have solid waste and recycling services provided by the city can drop off organics for recycling at one of seven sites.

Educating the public on how organics must be handled is vital to the success of the program said Herberholz. Crews cannot pick up organics if there is a problem with the contents of the cart. Unacceptable organic carts are marked with an educational tag explaining the issue and what must be done to correct the problem. Customers are instructed on how to resolve the problem and to put the cart out on the next collection day.

Some reasons why organics might not be picked up include:

- Organics were not bagged in paper or were in a non-compostable bag.
- Non-compostable materials were found in cart such as milk cartons, ice cream tubs or non-compostable food-service items.



Organics put into the organics bin must be placed in paper or other compostable bags.

PHOTO COURTESY OF MINNEAPOLIS SOLID WASTE & RECYCLING DIVISION OF PUBLIC WORKS

# Virgin Islands Waste Management Authority shortlists developers

Gershman, Brickner & Bratton, Inc. (GBB) disclosed that 12 firms responded to the Virgin Islands Waste Management Authority (VIWMA) Request for Qualifications (RFQ) issued on August 14, 2015. VIWMA is soliciting the private sector development of an Integrated Waste Management Project (IWMP) using the waste streams currently available and regulated by the VIWMA on the islands of St. Thomas, St. John and St. Croix. After careful review and evaluation of the qualifications packages by a team comprised of VIWMA staff, four private developer teams were shortlisted to participate in the next step of the procurement process.

The shortlisted developers will now participate in a Request for Proposals (RFP) process to compete to finance, plan, design, permit, construct, own, operate and maintain the most cost effective waste management facility which may include production of energy, fuel, recycled materials and

other products. The RFP, issued with the assistance of GBB, was issued October 9, and detailed proposals are due January 8, 2016. At this time, the ensuing Service Contract is anticipated to include a 20 operating year term.

"The two landfills operated by the VIWMA are scheduled to be closed soon and this procurement process will engage a private developer to form a public-private partnership to help the VIWMA transition from a landfill dependent system to one that includes more recycling and is integrated to address all of the waste management needs of the U.S. Virgin Islands," noted Bob Brickner, GBB executive vice president and GBB's project manager for this assignment. "We look forward to receiving and evaluating proposals that will help reduce the costs of waste management and increase sustainable waste handling activities."

Any project interest or inquiry should be made to: [sdavid@viwma.org](mailto:sdavid@viwma.org) and not GBB.

# Backhus and Terra Select sign cooperation agreement



Thomas Hein, managing director of the Eggersmann Group, Bernd, Christian and Andreas Farwick, managing directors of Terra Select, and Karlgünter Eggersmann, managing director of the Eggersmann Group.

Backhus, a specialist for professional composting solutions, and the screening machine manufacturer Terra Select have intensified their cooperation under the umbrella of the Eggersmann Group. The objective is to extend the Eggersmann product portfolio in the mobile machine sector as well as realizing an even stronger market position.

Andreas, Bernd and Christian Farwick, the managing directors of Terra Select GmbH & Co. KG and Karlgünter Eggersmann, managing director of Eggersmann GmbH & Co. KG, all signed the future cooperation contracts.

For the Eggersmann Group the cooperation with Terra Select is the logical expansion of the in-house product portfolio in the mobile recycling sector.

Terra Select has a high degree of experience and competence in the supplementary product segment for mobile screening machines. This cooperation agreement will enable completely new synergies and perspectives for strategic positioning in the mobile machine market to be developed for the future, said Karlgünter Eggersmann.

# USDA and EPA set nation's first food waste reduction goals

Agriculture Secretary Tom Vilsack and Environmental Protection Agency (EPA) deputy administrator Stan Meiburg disclosed the U.S.'s first national food waste reduction goal, calling for a 50 percent reduction by 2030. As part of the effort, the federal government will lead a new partnership with charitable organizations, faith-based organizations, the private sector and local, state and tribal governments to reduce food loss and waste in order to improve overall food security and conserve our nation's natural resources.

"The U.S. enjoys the most productive and abundant food supply on earth, but too much of this food goes to waste," said Agriculture Secretary Tom Vilsack. "An average family of 4 leaves more than 2 million calories, worth nearly \$1,500, uneaten each year. Our new reduction goal demonstrates America's leadership on a global level in getting wholesome food to people who need it, protecting our natural resources, cutting environmental pollution and promoting innovative approaches for reducing food loss and waste."

Food loss and waste in the U.S. accounts for approximately 31 percent – or 133 billion pounds – of the overall food supply available to retailers and consumers. Food loss and waste is single largest component of disposed U.S. municipal solid waste, and accounts for a significant portion of U.S. methane emissions. Landfills are the third largest

source of methane in the U.S. Furthermore, experts have projected that reducing food losses by just 15 percent would provide enough food for more than 25 million Americans every year, helping to sharply reduce incidences of food insecurity for millions.

"Let's feed people, not landfills. By reducing wasted food in landfills, we cut harmful methane emissions that fuel climate change, conserve our natural resources, and protect our planet for future generations" said EPA Administrator Gina McCarthy."

Ongoing federal initiatives are already building momentum for long-term success. In 2013, USDA and EPA launched the U.S. Food Waste Challenge, creating a platform for leaders and organizations across the food chain to share best practices on ways to reduce, recover, and recycle food loss and waste. By the end of 2014, the U.S. Food Waste Challenge had over 4,000 active participants, well surpassing its initial goal of reaching 1,000 participants by 2020.

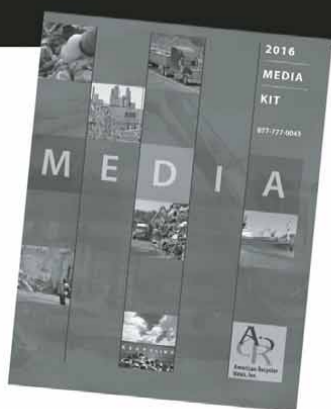
In addition to the U.S. Food Waste Challenge, USDA has unveiled several food loss reduction initiatives over the past few years, including an app to help consumers safely store food and understand food date labels, new guidance to manufacturers on donating misbranded or sub-spec foods, and research on innovative technologies to make reducing food loss and waste cost effective.



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## WCA Waste acquires Town And Country Disposal

WCA Waste Corporation (WCA), a non-hazardous solid-waste services company recently completed the acquisition of Town and Country Disposal, a substantial Kansas City, Missouri collection, transfer and materials recycling company.

Town and Country operates over 100 collection vehicles in the Kansas City market from its hauling facility in Harrisonville, Missouri. Town and Country also owns and operates a solid waste transfer station and a new materials recycling facility. WCA will continue to conduct the Town and Country operations from its current facilities in Harrisonville. WCA also plans to relocate its regional Missouri headquarters to Town and Country's Harrisonville facility.

Town and Country Disposal was founded in 1998 and has grown into one of the premier Kansas City waste service companies.

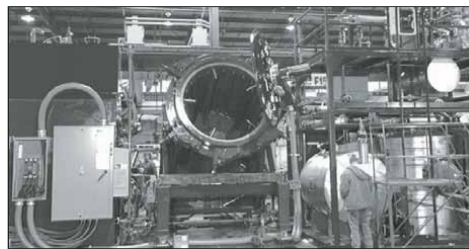
WCA has substantial waste collection and disposal operations in central Missouri but had not established a presence in the Kansas City market until January 2015 when it acquired the Manchester Transfer Station. The acquisition of Town and Country, together with the Manchester Transfer Station, establishes WCA as one of only three fully-integrated waste companies serving the Kansas City market.

## Organix Solutions commercializes technology that removes organics from MSW stream

Organix Solutions, an organics recovery and municipal waste consultancy based in Minnesota, recently reported their commitment to commercialize BurCell™ Recovery Technology. The BurCell is engineered to capture all organic waste from the municipal solid waste (MSW) stream, including food and compostable paper. The BurCell can remove the smallest particles of food scraps that typically are left behind with current material handling practices.

Organix Solutions' chief executive officer Jim Wollschlager demonstrated the BurCell at their Delano facility to over 100 attendees including state representatives, municipal leaders and customers.

"By incorporating this new technology we are reducing environmental impact by directing materials in the waste stream to the highest and best use," said Jim Wollschlager. "Our tech-



nology can help cities and commercial entities meet the new recycling laws and reduce greenhouse gas emissions."

The BurCell system was originally designed by Cornerstone Resources. Marathon Equipment, a brand within the Environmental Solutions Group (ESG) manufactures the BurCell system and has worked closely with Cornerstone and Organix Solutions to further enhance the BurCell design and thoroughly test the system for Organix Solutions' targeted applications.

In 1995 the Minnesota legislature established a 50 percent recycling goal

for its metropolitan counties by 2030. In 2010, the state mandated organics (food waste) as a recyclable and exempted source separated compostable waste from solid waste management taxes. In 2014, Minnesota set a new 75 percent recycling and composting goal for the Twin Cities metro area by 2030. California and several Northeastern states have implemented organics recycling laws, while other states are developing laws for managing organics. Organics and non-recycled paper represent up to 60 percent of the MSW stream.

In addition to the BurCell Recovery Technology, Organix Solutions will be expanding the versatility of the Delano materials recovery facility with an anaerobic digester slated to break ground this spring.

The anaerobic digester will generate fuel for the hauler's fleet.

## US Composting Council elects 2016 board

The US Composting Council (USCC) board of directors named Lorrie Loder of nuTerra Management, LLC as the 2016 USCC board president.

The other 2016 officers are:

- Vice president: Wayne King Sr., of EARTH Products
- Treasurer: Clayton Leonard of New Earth Inc
- Secretary: Jeff Ziegenbein, Inland Regional Compost Authority

Incoming board members include: Brian Fleury of WeCare Organics; Sarah Martinez, Eco-Products; Greg Gelewski, Onondaga County Resource Recovery Agency and Susan Thoman, Cedar Grove Composting.

They join Tim Goodman of Natureworks; Robert Michtisch from the University of Wisconsin; Patrick Geraty of St. Louis Composting; Rod Tyler of Filtrix; Matt Cotton of Integrated Waste Management Consulting;

Frank Franciosi of Novozymes; and Chuck Wilson of A1 Organics and the newly elected board officers.

Three directors; Heidi Ringhofer from Western Lake Suburban Sanitary Commission; Paul Sellev from Harvest Power and Rhodes Yepsen from Biodegradable Products Institute, are leaving the board.


The term of the new board began January 1, 2016.

## EPA grant helps fight dumping

The U.S. Environmental Protection Agency has awarded a nearly \$30,000 Environmental Justice Small Grant to the Coral Bay Community Council, Inc., of St. John in the U.S. Virgin Islands.

The grant money will be used to increase community awareness about health risks and environmental hazards posed by the illegal dumping of solid waste into drainage ditches. The grant was awarded to bolster programs

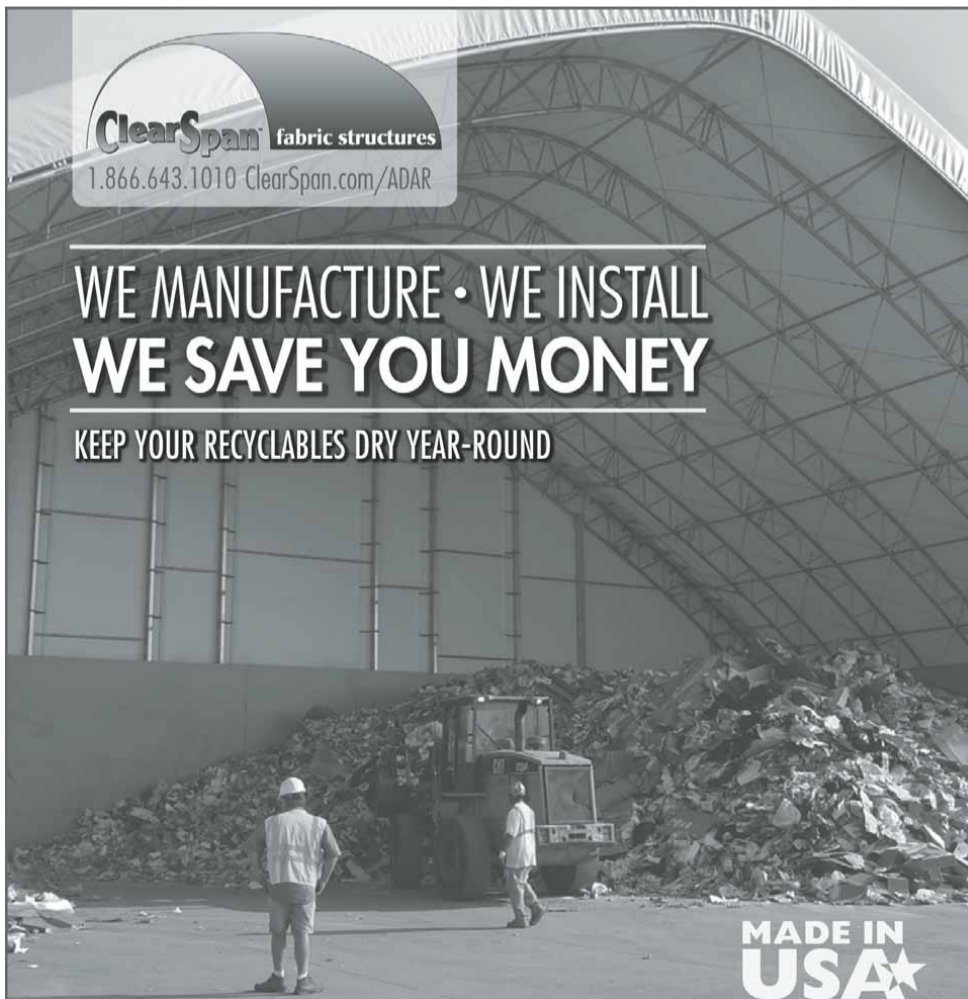
designed to take direct action against the dumping of solid waste into ditches in and around the community. Nearby coastal waters surrounding the Coral Bay community are at risk from the improper dumping. To address this, the Coral Bay Community Council will partner to create an education program specifically about the impact of improper solid waste disposal and its effect on residents and the local waterway.



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# EQUIPMENT SPOTLIGHT

## Containers

by MARY M. COX

maryc@americanrecycler.com

According to the Environmental Protection Agency, nearly 28 percent of total municipal solid waste is food waste, with a recovery rate of 2 percent. After recovery through recycling or composting, food waste is the largest category of discards at 21 percent. This represents a significant amount that can be recycled or composted and diverted from landfills. A wide range of containers are used by countless entities and individuals in an attempt to do just that.

Bomac manufactures polyethylene material handling carts. From the recycle cart to bulk containers, products are designed for the demands of light to heavy duty recycling. The recycle cart is Bomac's top selling cart and was designed specifically for the recycling industry. It is available in two sizes: 14.4 cubic feet and 23 cubic feet. Each cart is constructed of a FDA compliant tub mounted to a powder coated steel channel base with heavy duty hard rubber casters.



Bomac

Aleiha Hanson, sales representative, reports that "a lean manufacturing process allows Bomac to manufacture a cart to customers' specific needs and environment. Standard products typically ship within ten business days, available in a multitude of colors. Upgrades available include larger casters, fork bases and more. Accessories are also available, including lids – locking, slotted or standard; dividers and custom logo and text decals."

Additional products like bulk containers are available in three sizes for large storage and collection. Specialty carts are available for trash and more. Bomac shares common ownership

with other manufacturers, Royal Basket Trucks and Anthros PVC Products.

The Curotto-Can system can be used for residential waste, single-stream recycling, green waste, food waste, and "take-all" routes where operators even collect bulk items. The can is installed on front loaders and is used to convert a commercial front loader into a residential front loader. "The can will hold up to 4 ½ cubic yards per lift cycle and has the fastest load time of any automated system on the market. It delivers a proven 25 percent to 30 percent productivity advantage over automated side loaders (ASL). By using the robust reliability of a Heil Odyssey automated front loader, this carry can delivers game-changing performance that will allow service to more customers, more quickly, in more applications. Front loaders have a track record of robust construction and proven reliability, durability, and up time. Standardizing your fleet with the Curotto-Can system provides operational flexibility with fewer collection vehicle models to maintain. When operators are ready to switch from residential to commercial routes, the can may be dropped in a safe location in approximately five minutes," Frank Kennedy, sales director, explained.

He said the low lift-over height of the Curotto-Can, combined with a hopper that is four times larger than that of an ASL, makes it easy to collect oversized cardboard containers, uncarted bags and other bulk items. ASLs have a small hopper opening, compared to the Curotto product, even on drop-frame units, and so cannot accommodate larger items. Curotto-Can operators have a simple two step work circle for bulk that can't be grabbed with an arm. Operators can exit the cab, hand-load the material, and return to the cab in seconds.

Kennedy said, "The Curotto-Can Automated Carry Can combined with the Heil Odyssey automated front loader is the fastest growing segment in the refuse collec-



The Curotto-Can

tion vehicles market. Curotto-Cans will fit existing units with the use of a Curotto retrofit kit. Alternately, packages are available with Heil for the AFL with the Odyssey control system. The Odyssey system seamlessly integrates the AFL and the Curotto-Can. We have been serving both domestic and international markets for over 15 years."

ORBIS manufactures plastic bins, carts and composters that aid in improving recycling rates and reduces the amount of waste going to landfills. "The ORBIS GreenBin2 was designed in response to an increasing demand for a smaller, more appropriately sized container to collect source separated organics in residential and commercial applications. Our 12 gallon cart was designed for easy storage and collection of food scraps to help municipalities divert more food waste from landfills. A 360 double rim closure and secure front latch eliminates spills and traps odors, and a lid lock helps minimize animal access," stated Art McKenzie, account manager.

ORBIS also offers plastic curbside collection recycling boxes, organic recycling bins, the System Rain Barrel and the Earth Machine™ Backyard Compost Bin to improve recycling rates, conserve natural resources and help the environment. These products have been used by municipalities and haulers in the U.S.,

Canada and beyond for decades. "With value-added educational programming, community outreach and environmental expertise, our

See CONTAINERS, Page B5



ORBIS Corporation

### Manufacturer List

**Ameri-Kart**

**Doug Eck**

800-533-2475

www.amkwastehandling.com

**Bomac**

**Aleiha Hanson**

262-882-1227

www.royal-basket.com

**Busch Systems**

**Serena Brooks**

800-565-9931

www.buschsystems.com

**Cascade Cart Solutions**

**Cheryl Hoda**

800-968-2278

www.cascadecartsolutions.com

**The Curotto-Can**

**Frank Kennedy**

423-290-4746

www.curottocan.com

**Durabac**

**Penny Lamarre**

800-565-1723

www.durabac.ca

**E-Pak Manufacturing, LLC**

**Kyle Schlabach**

800-235-1632

www.epakmanufacturing.com

**Haul-All Equipment Ltd.**

**Twyla Gurr**

888-428-5255

www.haulall.com

**ORBIS Corporation**

**Art McKenzie**

416-745-7107

www.orbiscorporation.com

**Otto Environmental Systems North America, Inc.**

**Chris Sauritch**

800-795-6886

www.otto-usa.com

**Park-Kan**

**Terry Hill**

800-291-5487

www.par-kan.com

**Rudco Products Inc.**

**Mike Avis**

800-828-2234

www.rudco.com

**Stone Valley Container**

**Steve Stoltzfus**

814-667-2046

www.stonevalleycontainer.com

**T.M. Fitzgerald & Associates**

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610-853-2008

www.tmfitzgerald.com

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## Teamsters testify about Republic Services' radioactive landfill in St. Louis

The Teamsters testified at the St. Louis Tribunal that is investigating human rights violations against communities surrounding Republic Services' West Lake Superfund landfill site in Bridgeton, Missouri. The tribunal will report to the United Nations Human Rights and Environment Program.

*The jury found that several human rights violations have been substantiated.*

An underground fire has been raging for five years at the West Lake complex, which contains thousands of tons of illegally-dumped radioactive nuclear wastes in an unlined landfill. The subsurface fire is moving closer to the nuclear waste and is releasing toxic chemicals that residents and workers can smell for miles. The landfill complex is owned by the second-largest landfill company in the U.S., Republic Services.

Eighteen witnesses testified to a jury composed of leading civic and religious figures, led by Lois Gibbs of the Center for Health, Environment and Justice. Witnesses detailed their many health problems, including, deaths among family, friends and neighbors; disruptions to their daily routines; sharp drops in home values; and the inability to enjoy the outdoors and their homes.

Teamster members and other union workers from the warehouse sector and other businesses surrounding the landfill also testified at the tribunal.

Steve Johnson of Teamsters Local 688 in St. Louis testified on behalf of Marvin Kropp, president of Teamsters Joint Council 13. Johnson addressed how Teamsters and other workers are affected, as many reside and work at or near the landfill.

In the tribunal's preliminary findings, the jury found that several human rights violations have been substantiated, including violations against the right to life, to health, to property and to freedom of movement. The jury included a special note concerning the violations of workers' rights.

The preliminary recommendations of the panel of jurors were:

1. The landfill complex owners must provide immediate permanent relocation to anyone within one mile of the site who wants to move;

2. The landfill complex owners must provide the opportunity for homeowners living within five miles of the site to move within five years or until the site is cleaned up; and

3. Congress must authorize the Army Corps of Engineers' FUSRAP program to take over the site.

Any worker or resident affected may provide a one to four page testimonial about the violations of their human rights connected to exposure to the West Lake/Bridgeton landfill.

## Containers

■Continued from Page B4

team of experts work with municipalities and haulers to identify organic waste recycling/diversion goals and assist in planning curbside recycling or diversion programs to meet the needs of residents. We provide customizable organic waste recycling solutions unique to the specific needs of the municipality. Typically, organic waste recycling regulations are set at the state

or county level. Nationally, we know that many municipalities and commercial businesses are seeking zero waste status. Through a proven five step process, ORBIS is able to mitigate potential challenges and develop the best solution to help improve recycling rates. From kitchen to curbside or backyard, ORBIS offers products and programs to drive efficient organic waste recycling," McKenzie said. ORBIS Corporation is a subsidiary of Menasha Corporation.

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To be included in the spotlight, you must **manufacture** the equipment featured. We require a company name, contact person, telephone number and, if applicable, a website address.

To be listed in the appropriate spotlight, please call 877-777-0043.

American Recycler is not responsible for non-inclusion of manufacturers and their equipment. Manufacturers are to contact American Recycler to ensure their company is listed in the Equipment Spotlight.

**UPCOMING TOPICS**

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## NEW PRODUCT SHOWCASE



### FAIRBANKS RELEASES LOW-PROFILE U-SHAPED FLOOR SCALE

Fairbanks Scales, Inc. released its new Yellow Jacket u-shaped floor scale, which decreases weight times by up to 50 percent in applications utilizing pallet jacks. This scale is an ideal alternative to traditional floor scales in manufacturing and warehouse applications where floor space is at a premium.

The floor scale allows material handlers to capture the weight of pallets and skids without removing the pallet jack.

The floor scale features a profile of 2.4" tall, making it the lowest profile floor scale or U-shaped floor scale available.

**Fairbanks Scales**  
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Kansas City, MO 64106  
816-471-0231  
www.fairbanks.com



### CARTS PERMIT COLLECTION, TRANSPORT OF MATERIALS

The 50P Series recycling and utility carts and trucks in the Poly-Trux® line feature a proprietary, T-nut design that allows wet and dry products to be collected and transported in a hygienic, plastic cart without fear of leaks, drips and spills or of their potential to cause contamination.

Molded-in during manufacture, the T-nuts attach the plastic cart bin to its poly-steel base and casters, leaving a smooth, metal-free cart interior that is virtually leak-proof and eliminates outdated bolt-through designs, which can allow liquids to leak out the cart bottom.

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800-829-4535  
www.MODRoto.com



### MUNCIE POWER'S LINE OF LOW SPEED HIGH TORQUE MOTORS

Muncie Power Products, Inc. launched a new line of low speed high torque motors.

Featuring the MB and MJ Series, the new line offers 23 different displacement sizes between the two series. A spool valve design (MB) and disc valve design (MJ) allow each series of Muncie Power's motors to achieve high efficiencies across a broad torque range.

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### SELICK EQUIPMENT LAUNCHES S150 ROUGH TERRAIN FORKLIFT

The S150, 15,000 pound capacity at 24" load center is powered by a 74hp 4 cylinder intercooled tier 4 final electronic engine. The clean burning diesel does not require exhaust after-treatment, diesel exhaust fluid nor regeneration cycles. The engine is coupled to an automatic power shift 4 speed transmission and when equipped with the 4 x 4 option, allows for on-the-go engagement of the steerable drive axle.

The S150 is designed for heavy industrial applications such as steel and plastic pipe manufacturing/distribution, steel fabrication, engineered wood products, concrete products and automotive recycling.

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358 Erie Street North  
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519-738-2255  
www.sellickequipment.com



### SENNEBOGEN OFFERS DUAL-FUEL MATERIAL HANDLER

A new electric drive 821 M "E" material handler from Sennebogen features a diesel Powerpack in its counterweight, allowing operators to unplug and range freely through their jobsite.

In normal operation, the 821 M is driven by a clean, efficient 90 kW electric motor, powered through a tether cable. When the unit is required for tasks in another part of the facility, the operator simply removes the large plug and rolls up the cable. Then he switches the rubber-tired 821 M to diesel mode and it's ready to move out.

**Sennebogen LLC**  
1957 Sennebogen Trail  
Stanley, NC 28164  
704-347-4910  
www.sennebogen-na.com

## Food waste expert offers consumer food saving guide

The Waste-Free Kitchen Handbook offers simple consumer tips and tools to saving money and food, from the grocery store to the kitchen.

"Imagine walking out of the grocery store with four bags full of food, dropping one, and not bothering to pick it up – that's essentially what American families are doing every day," said Dana Gunders, author and scientist at the Natural Resources Defense Council. "Wasted food is wasted money, wasted energy and wasted water. Armed with simple tips and tools, families can make a major dent in what's currently getting tossed out with the trash – and put a little cash back in their wallets at the same time."

Americans are throwing away 40 percent of food in the U.S., the equivalent of \$162 billion in wasted food each year. Until now, many well-intentioned home cooks have lacked the tools to change their food waste habits.

Gunders' handbook – packed with checklists, simple recipes, practical strategies, educational infographics and custom kitchen audits – is the ultimate tool for reducing food waste at home. It dispels the illusion that cutting food

waste requires significant time and money, with easy tips for how to:

- Cook with leftover ingredients
- Grocery shop smarter
- Store foods properly

When food is wasted, so are all the resources that went into producing it:

•25 percent of our nation's fresh water goes into producing food that is never eaten.

•If global food waste was a country, it would have the world's largest greenhouse gas footprint after the U.S. and China – food waste just in the U.S. is responsible for emissions equal to those from 33 million cars.

•Food waste is the single largest component of solid waste in U.S. landfills.

•28 percent of the world's agricultural land – an area larger than Canada – is used to grow food that gets wasted.

With U.S. consumers collectively responsible for more wasted food than farmers, grocery stores or any other part of the food-supply chain, the action we take in our homes can play a critical role in meeting these new targets.

## Collections

■Continued from Page B1

•The organics cart was not shoveled and free from snow and ice, or not at the pickup area next to the garbage cart on time.

•The cart weighed over 200 lbs.

"We are unique here because 80 percent our collection takes place in alleys," said Herberholz. "Our alleys are narrow with some dead ends, so it's a challenge. We use 2 person crews with rear load, 20 cubic yard packer trucks. They wheel the carts to the trucks and use semi-automatic lifts to dump carts into the hopper.

"We don't have any large composting facilities within the city or county. With city forces we collect half of the city. We have a contract with a group of small haulers that pick-up the other half. They model our collection service and provide wheeled-carts for organics. Truckloads of organics are taken to a transfer station where they are tipped, then loaded and trucked to a compost facility outside the city. The successful bidder for both our yard and organic processing is Specialized Environmental Technologies, Inc. We pay them a tipping fee of \$60 dollars a ton for organics. That's actually higher than we pay at our waste-to-energy facility, which is \$49 dollars a ton."

Herberholz hopes that there will be value to the city's organics and the tipping price will come down over time. Minnesota has a recycling goal of 75 percent by 2030 and 15 percent of that is valued organic. Minneapolis adopted a more stringent goal in June 2015 of recycling and composting 80 percent of all waste generated by 2030 and to achieve a zero-percent growth in the

total waste stream from levels set in 2010. Through efforts to develop a compressive zero-waste plan, it is clear the city is committed to reaching that goal.

"As a whole, our city has a diversified population," Herberholz reported. "There's a good environmental mentality here, but we have a way to go. There are spots where there is more environmental consciousness than others and one of the biggest challenges are some of the non-English speaking factions within the city and trying to communicate to them what recycling organics is all about. We work with our city communications department, our neighborhood and community relations department, and Hennepin County to design videos and translate materials so we can get the word out."

Municipal organic collection programs such as the one in Minneapolis may cost rate payers in the short term, but the long term benefits are substantial. Even so, as markets are created for compost and organic feedstock for energy production, today's tipping fees may be new profit centers tomorrow. Decreasing organics in landfills helps reduce methane emissions, a potent greenhouse gas. Organics recycling increases the efficiency of waste-to-energy facilities. Organically derived compost reduces the need for chemical fertilizers and promotes higher yields of crops, especially in the production of organic foods. Compost can also help with reforestation, wetlands restoration, and habitat revitalization by improving contaminated, compacted, and marginal soils in a cost effective manner. No doubt we'll be seeing more municipal collection of organics in the months ahead.

## Carrier held summit to reduce waste

Halving food waste by 2030 and reducing greenhouse gas emissions are among the United Nations' top Sustainable Development Goals. In support of feeding more and wasting less through a strengthened cold chain, Carrier is a part of UTC Climate, Controls & Security, a unit of United Technologies Corp.

The summit convened with global leaders in the supply chain private sector, academia and government to discuss food waste in emerging and developed economies.

Keynote speakers included Dr. Joseph Mpagalile, Agro-food Industries officer, Food and Agriculture Organization of the United Nations (FAO); Didier Coulomb, general director of the International Institute of Refrigeration; and Clementine O'Connor, sustainable food systems consultant, United Nations Environment Program (UNEP).

"With new technologies and practices for a more efficient cold chain, significant progress can be made to reduce global carbon dioxide emissions, improve cross border economic activity and help reduce hunger," said David Appel, president, Carrier Transcold & Refrigeration Systems.

One third or more of the food produced each year is never eaten – a fact that has been widely recognized as a global environmental, social and economic issue. Food waste generates 7 percent of global greenhouse gas emissions, or 3.3 million tons, offering a significant opportunity for countries and industries to reduce their negative impact on the climate. In fact, if food waste were a country, it would be the third largest emitter of greenhouse gas emissions, behind China and the U.S.

There are multiple reasons why food is lost or wasted throughout the supply chain but among them is the lack or deficiency of the cold chain as described in the FAO findings. The issue is most dire in countries with the least developed economies, but even in these countries where the cold chain is in nascent stages of development, there are many opportunities to strengthen it in order to preserve, protect and deliver perishable foods safely to market, and thus help to reduce food waste.

Only 10 percent of worldwide perishable foods are refrigerated, yet, as identified at the inaugural World Cold Chain Summit, refrigeration is the best technology, with no associated risks, to prolong the shelf life of perishable food. A varied diet is essential to provide micronutrients, and the cold chain is critical to transporting, preserving and providing high-micronutrient foods. Reducing fruit and vegetable loss would have a significant impact on the amount of micronutrients that would be available in developing countries like India, which would help to alleviate hidden hunger and many of the devastating deficiencies that result.

## Study shows composting remains the best option

Many people compost their food scraps and yard waste because they think it's the right thing to do.

A new University of Washington study confirms that sentiment, and also calculates the environmental benefits associated with keeping these organic materials out of landfills.

The biggest takeaway for residents of Seattle, San Francisco and other places that offer curbside pickup is to take advantage of that service.

"You should definitely pay attention to where you put your food waste, and you should feel good you live in a place where compost is an option," said paper author Sally Brown, a UW research associate professor of environmental and forest sciences.

Food waste in particular generates a significant amount of the greenhouse gas methane when it's buried in landfills, but not so when composted. U.S. cities and counties that offer composting prevent otherwise trash-bound food scraps from decomposing in landfills and generating methane – and they get a significant carbon credit as a result.

"That gives municipalities a big incentive to do this," Brown added.

Brown's study, appearing in the January 2016 issue of *Compost Science & Utilization*, analyzes new changes to a U.S. Environmental Protection Agency model that helps solid waste planners estimate greenhouse gas emission reductions based on whether materials are composted, recycled, burned or thrown away.

With compost, the model calculates how much methane is produced over time in landfills as organic materials decay. It also considers how much methane from landfills is currently captured in collection systems versus being released into the atmosphere.

The results are overwhelmingly in support of composting food waste rather than sending it to landfills.

"Putting your food waste in the compost bin can really help reduce methane emissions from landfills, so it's an easy thing to do that can have a big impact," Brown said.

In the U.S., about 95 percent of food scraps are still thrown away and eventually end up in landfills. The scenario is better for yard waste – grass clippings, leaves and branches – with more than half diverted to compost facilities instead of landfills.

Brown's analysis found that the benefits of composting yard trimmings is less clear on paper, because the speed that the material decomposes depends on

*The Cohens were shown into the dentist's office, where Mr. Cohen made it clear he was in a big hurry.*

*"No gas or needles, just pull the tooth and get it over with."*

*"I wish more of my patients were as stoic as you," said the dentist admiringly. "Now, which tooth is it?"*

*Mr. Cohen turned to his wife Becky. "Show him your tooth, honey."*

location and season. For example, yard waste in Florida in December will likely break down a lot quicker in landfills and create more methane gas than the same amount of yard waste in Minnesota during the same month.

Food scraps, alternatively, decay and start producing methane at about the same rate in all regions. The content of food waste is relatively consistent across seasons and locations, and the same can be said for conditions in landfills. While it may be snowing in Minnesota, the temperature within the landfills is likely to be over 70°F.

The variation for yard trimmings makes it hard for the Environmental Protection Agency model to cast a broad generalization of the material's methane production, and thus the overall environmental cost and benefit of composting verses landfilling, Brown said.

But composting food scraps and woody yard materials together makes sense because dryer, high-carbon, yard trimmings mix with soggy food scraps to create ideal conditions for the compost process, she added.

Seattle and King County were among the first municipalities nationwide to adopt food waste composting and curbside pickup. Other leaders include San Francisco, New York City and the states of Vermont and Massachusetts.

The study was funded by the King County Wastewater Treatment Division and the U.S. Environmental Protection Agency.

## Fluoridation chemical company fined \$2 billion

Mosaic Fertilizer, LLC, is one of the largest sellers of a fluoride chemical, fluorosilicic acid, that cities add to public drinking water. Fluorosilicic acid is described by EPA in the Consent Decrees as a hazardous waste produced at Mosaic's fertilizer plants.



For decades Mosaic has been selling fluoridation chemicals to public drinking water systems across the U.S.

The fine was levied by the EPA and U.S. Department of Justice. These wastes are produced at Mosaic's six phosphate fertilizer plants in Florida and two in Louisiana.

The RCRA laws govern the storage, treatment and disposal of hazardous waste. Mosaic's 60 billion pounds of improperly handled hazardous waste cited by EPA is the largest amount ever covered by a RCRA settlement. Mosaic's wastes have also caused huge local environmental problems, due largely to their high fluoride levels. The fluoride, not captured in pollution control devices and sold for water fluoridation, ends up in their liquid and solid wastes. Other toxic constituents include arsenic, lead, cadmium, uranium and radium. Enormous quantities of these wastes have been stored for years in so-called gypsum stacks. They will never become non-toxic, and these open hazardous waste piles have regularly leaked into rivers and groundwater causing fish kills and other problems.

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