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Auto recyclers facing rough roads

by MIKE BRESLIN

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Back in January, 2010 American Recycler published an article penned by Mark Henricks titled Rough Roads Ahead about the problem of auto recyclers acquiring cars. At that time, it was the number one issue facing recyclers.

Five years later, we followed up with Michael E. Wilson, chief executive officer of the Automotive Recyclers Association (ARA) and asked how business is for auto recyclers.

"I wouldn't say that the economy for auto recyclers has improved since 2010. In some aspects there may be some better opportunities for recyclers in the coming months, but if you are looking at the last five years, really not much has changed on buying at the auctions, other than fees continuing to increase.

For the last 18 months, because of the economic conditions in China, India, Turkey and so forth, full service recyclers have seen seller services and scrap prices take a huge downturn, probably 50 percent of what they were, maybe down more towards 75 percent on scrap prices. For recyclers on the self service side, it's been a huge factor. The prices may have come down for purchasing vehicles, but if the scrap processors are not buying the hulks it causes a lot of issues and challenges for them.

"The self service part of the industry really had significant growth from about 2010 and coming out of the recession. That part of the market was definitely picking up. Folks in our industry that were full service were looking at opening up hybrid yards where one part was full service and the other part self service. Those who did that over the last two or three years did not experience an upturn for very long.

"In the full service sector, with the electronic commerce and on line auctions of



With the economic conditions in China, India and Turkey there's not a big appetite for scrap.

salvaged vehicles, it continues to be more than auto recyclers that are buying vehicles. Probably about 50 percent of the buyers at the salvage pool auctions are recyclers and the rest are the general public and used car dealers. There's been a continued trend towards an increase in the public and used car market, probably a single digit increase since 2010. With the price of used vehicles being at an all-time high, a lot of dealers are coming into the salvage auctions, purchasing vehicles, fixing them up and putting them up for sale."

Auto recyclers will have to continuously adapt their operations...

Edmunds.com, a leading reference for car shoppers, recently reported that certified pre-owned (CPO) car sales are at an all-time high. In the company's latest used vehicle market report, analysts noted that in 2014 CPO sales hit an all-time high of 2.3 million. Last year, CPO made up 20.8 percent of total used car sales at franchised dealerships, the highest percentage since certified pre-owned programs were introduced.

"We fully expect CPO popularity to continue throughout 2015 because many leased cars are being returned to the dealership in excellent shape and lightly used cars are being traded in at faster rates than in previous years. This allows dealers to maintain a large CPO inventory," explained Edmunds.com senior analyst Jessica Caldwell. "Car shoppers are finding a great selection to choose from, and, in the current economy, many are comfortable spending a bit more for that extra peace of mind that a CPO car brings."

Wilson estimated that the number of used vehicles being exported out of the U.S. from auctions at about 30 percent. But it's mostly late model vehicles in the \$15,000 to \$20,000 price range, because it doesn't make economic sense to export the older, less expensive cars.

Also, Wilson pointed out that over the last 18 months the U.S. dollar has really strengthened, which is going to have a dramatic effect on the used vehicle export sector.

In 2010 ARA estimated that there were 8,400 automotive recyclers in the U.S. "Since then we sense there's probably been a small reduction in that number," said Wilson. "We are hearing of

closing of shops because it's getting harder and harder to stay in business. In addition, there have been and continue to be numerous acquisitions. The landscape really hasn't changed that much since 2010. It was hard then and it's hard now. Some of the folks that were on the fringes back then have been weeded out.

"From what I hear, low prices for scrap metal are not going to rebound anytime soon," Wilson continued. "Prices, I believe, are pretty much going to stay where they are for the rest of the year, at least, and I don't know how much further into 2016. The longer that price is down, it hurts each and every month for those relying on crushing cars when they are making one quarter or one third of what they were making five years ago. That's painful.

"Scrap prices are also having a hard time in the collision repair industry where we sell a lot of our parts. They've had a huge wave of public consolidation and we believe the recycling industry is going to see more taking place."

Wilson was referred to a group of recycling companies that consolidated with an IPO this spring as Fenix Parts, Inc. It combined eight original companies and created a network of full service and self

See AUTOMOTIVE, Page 4

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Universities compete to reduce stadium waste

Until the end of November, college football is scoring big by tackling stadium and tailgating waste through the national GameDay Recycling Challenge, where teams and their fans compete to see who can reduce and recycle the most GameDay items, such as glass bottles and food packaging waste.

The GameDay Recycling Challenge is a national program administered by Keep America Beautiful in partnership with the College and University Recycling Coalition, RecycleMania, Inc. and the Environmental Protection Agency's WasteWise program. During the Challenge, colleges and universities select one or more home football games to promote waste reduction and recycling.

Winners for each athletic conference will be recognized, with five different categories per conference. National winners will be recognized in two categories: 1) total amount recycled, composted and donated; and 2) diversion rate – or the percentage of

waste diverted from disposal. During the 2014 GameDay Recycling Challenge, nearly 2.2 million pounds of waste was diverted from 91 colleges and universities.

"Football is big on our campus and the GameDay Recycling Challenge is our chance to shine," said Dave VanDeventer, Clemson University's solid waste and recycling manager. "The Challenge allows us to showcase our athletics department's sustainability efforts and demonstrate Clemson's competitiveness off the field as well as on." The Clemson Tigers beat out colleges across the nation to win the 2014 GameDay Recycling Challenge by collecting over 60,000 pounds of recyclables and food organics during a single home game.

GameDay Recycling Challenge also honors schools each year that are committed to Zero Waste via an online "Zero Waste Wall of Fame." Zero waste is commonly defined as reaching a 90 percent or higher diversion rate.

California Governor approves equipment sales tax exemption

As reported in American Recycler's October 2015 edition, the California Legislature passed AB 199, which was then moved to Governor Jerry Brown for approval.

Governor Brown has now approved the sales tax exemption on equipment that businesses can use to help the state reach its green goals.

AB 199 creates a sales and use tax exemption on purchases of equipment used for recycling and composting, as well as equipment that processes recycled materials. Businesses may apply for the exemption with the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA), which provides similar exemptions for sustainable energy and transportation purchases with the goal of reducing greenhouse gas emissions.

As California strives to achieve its ambitious recycling goal of recycling 75 percent of the solid waste it generates by 2020, an estimated 22 million tons will have to be recycled or composted instead of being sent to a landfill. Additionally, a new law set to take effect next year will require restaurants, grocery stores, apartments and other commercial

generators of organic waste to contract to have their waste composted or anaerobically digested, increasing the need for equipment to handle this new material.

CAEATFA is authorized to approve up to \$100 million in sales tax exemptions per year. However, despite approving almost every exemption application, it has only approved \$82 million in total exemptions since the initial exemptions were first created through legislation in 2010.

According to California's Department of Resources Recycling and Recovery, CalRecycle, every year the state exports 20 million tons of recyclables that are worth nearly \$8 billion. They estimate that meeting the state's recycling goals with in-state infrastructure could generate an additional 110,000 jobs, on top of the existing 125,000 people employed in recycling. Furthermore, CalRecycle reports that, for every ton of material that gets recycled instead of being disposed, California's 5300 recycling establishments will pay an additional \$101 in salaries, produce \$275 more in goods and services, and generate \$135 more in sales.

New York Department of Sanitation offers curbside collection of clothing

To help NYC residents responsibly recycle their unwanted clothing and textiles, the New York City Department of Sanitation (DSNY) is launching a pilot program to pick-up clothing and textiles from residents at their curbside through a special one-time collection this fall.

"Each year, city residents throw away more than 200,000 tons of clothing and textiles," said Sanitation Commissioner Kathryn Garcia. "This trial illustrates our continuing efforts to find innovative ways of recycling the most common materials found in our waste stream. Textiles make up about six percent of our waste. Recycling and reusing this material will help the City reach its goal of zero waste to landfills by 2030."

Residents living in areas covered by the program will receive notice and instructions in the mail. Covered areas include:

- Staten Island Community Board 3 - Includes Arden Heights, Tottenville, Huguenot, New Dorp
- Bronx Community Board 8 - Includes Riverdale, Fieldston
- Queens Community Board 11 - Includes Bayside, Auburndale, Oakland Gardens, Douglaston, Little Neck
- Brooklyn Community Board 11 - Includes Bath Beach, Bensonhurst, Gravesend, Mapleton

Districts were chosen for the pilot based on the high percentage of single-family homes, which are not eligible for the re-fashionNYC textile recycling pro-

gram, and limited access to drop off locations for donation of clothing and textiles. More than 210,000 households will be able to participate.

After collection, DSNY will bring all items to Goodwill, where donations will help support their mission of empowering individuals with disabilities and other barriers to employment gain independence through the power of work.

This program is a partnership with the Uniformed Sanitationmen's Association, Local 831. It will use existing personnel and equipment to collect the items on the overnight shift. After the collections, DSNY will evaluate the viability of the program.

Residents in the designated pilot neighborhoods will receive a specially marked pink colored bag in the mail. Additional bags can be picked up from their local Community Board, or they may use a clear bag with labels available online.

Residents should fill the pink bags with clean, unwanted textiles. Next, they should securely tie the bags and place them at the curb after 4 p.m. the night before recycling collection day, during their designated collection week. DSNY will make only one pick-up, from each residence during their specified collection week.

DSNY will accept clean, unwanted clothing, shoes, handbags, belts, towels, linens, and curtains. Ripped or torn items will also be accepted and recycled.

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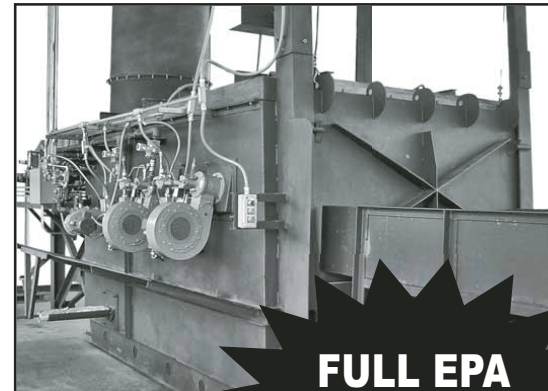
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Los Angeles district expands Bigbelly recycling system installations

Bigbelly, Inc. disclosed that the Los Angeles Ninth Council District is significantly expanding its use of the Bigbelly system to help combat the litter problem on city streets and throughout the region's public areas.

The Bigbelly system is part of a comprehensive effort to eliminate blight, improve livability, and spur economic development. The initiative also includes the development of a multi-agency taskforce, installation of cameras

in chronic dumping sites, and deployment of hundreds of trash cans. To date, combined efforts have resulted in the removal of over 6,000 tons of bulky items and nearly 4,000 tons of abandoned waste.

The Bigbelly system includes waste receptacles that contain a built-in compactor, which increases waste volume and improves operational efficiencies by up to 80 percent. The smart system and its cloud connected communication

informs waste collection operators when the waste and recycling units need emptying. The innovative platform has proven effective and efficient in reducing collection frequency, which in turn reduces labor costs, and the Department of Public Works' carbon footprint. The expansion will help curb what has historically been an ongoing problem for residents and businesses in the Ninth District.

Automotive

■Continued from Page 1

service recycling parts yards in key regional markets in the U.S. and Canada. The founding companies had been in business an average of 25 years and operate from 13 locations. Since the IPO, Ocean County Auto Wreckers of Bayville, New Jersey has also joined the Fenix consolidation.

In speaking of the advantages of consolidation, W. Kent Robertson, chief executive officer of Fenix said, "Given the highly fragmented nature of the automotive recycling industry with literally thousands of companies, there is a great opportunity for further consolidation. In addition to growing organically, expansion through acquisition will be an important part of our overall strategy and a key long-term value driver for our customers and shareholders.

"We also believe there are significant benefits of scale – first, increased

parts availability through the hub; second, synergy with respect to how we buy cars, tow and distribute parts to our customers; and third, the leverage we gain on our fixed cost structure and corporate general, administrative expenses. We see additional growth opportunities by enhancing the effectiveness of our sales force, the development of an integrated technology platform for bidding and pricing, the expansion of our dismantling capacity, and by growing our distribution in existing and adjacent markets," Robinson concluded.

"It wouldn't surprise me that other entities look to an IPO as a possibility over the next few years because of economies of scale and to make sure there's a long term plan for a business," Wilson predicted. "We have many generational businesses in the scrap industry, often third and fourth generation family businesses. Sometimes the latter generations don't necessarily want to be in that business and are looking for ways to continue operations. Consolidation is one way."

Wilson said that one of the most significant changes for full service auto recyclers over the past five years is change at an accelerated pace. A lot of electronic commerce has taken place, especially over the past two or three years with new platforms coming into the marketplace that have caused issues. GM, for example, is looking at a dynamic pricing platform for their replacement parts. That will make it more difficult to price recycled parts. There are regional and seasonal pricing differences and many other supply and demand factors. Electronic platforms, especially in the collision and repair industry are getting more and more sophisticated so the quality of recycled parts needs to be raised. OEMs want to recapture the replacement parts market because it's dropped from 74.8 percent back in 2008, 2Q. Now they are at 65 percent on replacement parts.

"Since the spigot has kind of been turned off from China and other foreign markets some shredders are not even buying scrap depending on how much they have in inventory," Wilson observed. "And since there's really not much of a demand from shredders to buy scrap, that's really been hurting recyclers.

"No question, automotive recyclers are definitely getting more curves thrown at them these days, but the industry has been around for 100 years and they have modified their operations to compete as time has gone by. And, I am confident that most all of them will do the same down the road, but they will have to continuously adapt their operations to change," Wilson concluded.

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GRAPPLES



Events Calendar

November 4th-5th

Canadian Waste & Recycling Expo. Palais des Congres, Montreal, QC.
770-984-8016 • www.canadian-waste-recycling-expo-us.messefrankfurt.com

November 4th-6th

New York State Recycling Conference. Otesaga Resort Hotel, Cooperstown, New York.
518-482-7395 • www.nysar3.org

November 9th-10th

NERC Fall Conference. Providence Biltmore, Providence, Rhode Island.
802-254-3636 • www.nerc.org

December 5th

WV First Lego League State Championship - 2015 Trash Trek Challenge. Fairmont State University, Fairmont, West Virginia.
304-367-8438 • www.wvroboticsalliance.org

January 6th-9th, 2016

The Consumer Electronics Association's CES 2016. Las Vegas, Nevada.
703-907-7600 • www.cesweb.org

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NYC proposes recycling rules for businesses

In an effort to have more uniform and easier to understand recycling rules for all businesses, the New York City Department of Sanitation (DSNY) proposed amended rules governing recycling requirements for commercial establishments and others who have their garbage and recycling collected by private carters.

DSNY published the proposed rules in the City Record and accepted comments until the October 22 public hearing.

The proposals would revise the city's current commercial recycling rules to simplify the requirements, which would make them more understandable for businesses and easier to follow. Currently, businesses are required to recycle different materials based on their business type. Eliminating the distinction between business types and applying the same rules for all businesses will facilitate greater recycling participation. In addition, the proposed rules allow for co-collection of recyclables in a single recycling stream, which will help make commercial recycling easier to manage and can significantly increase diversion of recyclables from landfills.

The proposed rules:

- Designate a number of recyclable materials including, but not limited to, metal, glass, plastic, and paper that businesses

that receive private carter collection are required to recycle.

- Prohibit the commingling of any designated recyclable materials with garbage or other solid waste.

- Allow private carters to collect recyclables in separate paper and metal, glass, and plastic streams or as a single recycling stream.

- Require each business to post a sign identifying its private carter(s), each designated recyclable material that will be collected by each private carter, and if such private carter will be utilizing single stream recycling.

- Provide implementation and notice requirements for owners, net lessees, or persons in charge who arrange for private carter collection, and set forth recycling requirements for their tenants and occupants.

- Set forth responsibilities of operators of non-putrescible and putrescible solid waste transfer stations.

- Provide for the enforcement of such rules in accordance with the New York City Administrative Code.

If adopted as proposed, the rules would go into effect in July 2016, though businesses would have an additional year, until July 2017, until violations would be written.

Ventura County approves zoning change for compost facility

In a unanimous 5-0 vote, the Ventura County board of supervisors approved a zoning change that will enable Agromin to expand its composting facility on Limoneira Company property near Santa Paula. Agromin, headquartered in Oxnard, is the food and organic waste composter for cities throughout Ventura County and its unincorporated areas. Agromin's organic compost and soil products are used by farmers, landscapers and homeowners.

Agromin currently operates at Limoneira on a 15 acre site in an unincorporated portion of the county. It hopes to increase the size to up to 100 acres. Agromin also has a nine acre composting yard in Oxnard near Ormond Beach, but plans to close the

facility once the Santa Paula expansion is complete. Before the expansion can take place, the new facility must be permitted by the county. The transition to the larger site is expected to take place in about three years.

"Having a composting location that can handle all of the county's green and food waste ensures that the county doesn't have to send recyclable organic materials outside the area for composting or have it end up in landfills," said Bill Camarillo, Agromin chief executive officer. "With new laws coming on the books that reduce how much cities can place in landfills, Ventura County and its cities will be in great shape to be in full compliance for years to come."

Agromin would process about 300,000 tons of organic material at the expanded site each year – 200,000 tons would be green waste from homes and businesses and 100,000 would be food waste from restaurants and other food service facilities. Once collected and cleaned, the material is naturally processed into compost and mulch. Of the processed material, 60 percent will be used by Ventura County commercial farmers. The rest would be used in residential, commercial and municipal landscapes. Agromin also plans to capture the gases created by the composting process and turn it into clean biofuels that can be used by trucks, buses and other vehicles.

Recycling in subway stations to increase

At busy Alewife Station in Massachusetts, 7' tall kiosks built with 100 percent recycled materials offer Massachusetts Bay Transportation Authority (MBTA) users the ability to recycle.

The two kiosks are part of a pilot program designed by Mass-Recycle in partnership with the MBTA, the Massachusetts Beverage Association, and Casella Recycling, with the long-term goal of increasing recycling in MBTA Subway stations.

The recycling receptacles are expected to not only be cost-neutral when it comes to maintenance, but to have the potential to increase revenue for the MBTA if used on a larger scale by making space for increased advertising revenue and adding valuable materials to recycling tonnages, including aluminum and PET, the material used for water bottles.

The Massachusetts Beverage Association is a sponsor of the Alewife pilot program as part of

its Massachusetts Recycling Challenge, which has included placing recycling receptacles in high foot-traffic areas in Worcester, Lowell, Salem, Quincy, and several other communities to increase on-the-go recycling, as well as providing technical assistance to communities seeking to enhance their municipal recycling programs, and holding seminars that were collectively attended by representatives from over 100 cities and towns.

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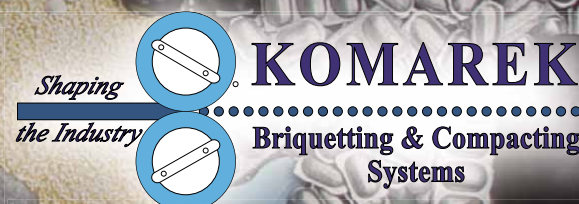
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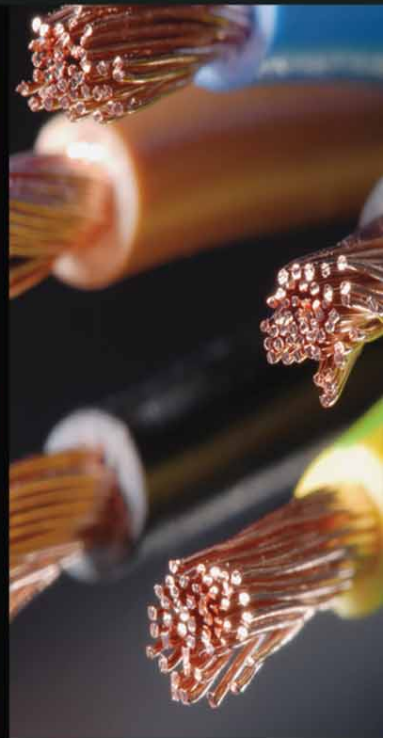


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Plastic recycling in Europe to increase significantly by 2025

According to a new study of consultancy ecoprog, up to 300 new sorting plants for plastic wastes will be commissioned in Europe by 2025. This happens against the backdrop of increasing recycling shares in the different countries.

Today, Europe has almost 1,200 active plastic sorting and recycling plants. However, this portfolio will not be large enough as recycling becomes increasingly important.

This is why sorting plants with a capacity of 5.2 million tons will be commissioned by 2025. This is a growth of 25 percent and the number of plants will increase by about 300.

The EU Waste Framework Directive will be the main market driver. By 2020, 50 percent of the plastics in municipal solid waste (MSW) have to undergo material recovery. Almost no EU member state has yet reached this goal, which creates financial challenges for many countries.

"Within the waste management sector, recycling will be the most important growth markets in the next years" said project head Marcel Siebertz.

South Europe has the largest market potential: France, Spain and Italy are three populous states with a lot of catching up to do.

The waste management systems in Eastern Europe are currently being transformed and therefore also pro-

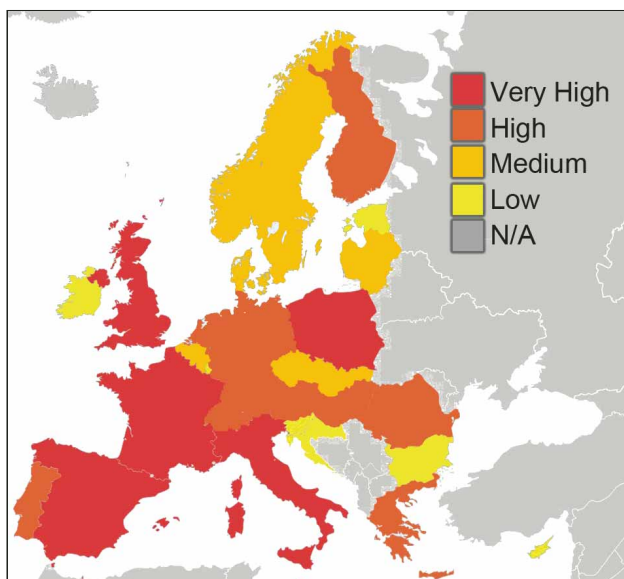


IMAGE COURTESY OF ECOPROG

duce a strong development potential, even though financial incentives and unambiguous political framework conditions for recycling are lacking.

However, many European waste management systems that are considered as more advanced also do not yet reach MSW recycling quotas complying with the targets. This holds true for the Netherlands, Denmark, Austria, Sweden and Norway.

Contrary to the situation in South and Eastern Europe, however, the main reason for this is not the status of landfilling but the traditionally large market share of waste incineration. Switzerland, for instance, only reaches a material recovery share of plastic wastes of 10 percent, with 90 percent being incinerated. In late 2015, however, a revision of the Environmental Protection Act should also include a significant increase of recycling.

"Many countries increase their sorting capacities by expanding or building additional plants at already existing sites. An analysis of the active plants in Europe has been lacking so far," said Siebertz.

This is why ecoprog has collected information on around 1,200 plastic sorting and recycling plants throughout Europe, analyzed and compared them in a market study and forecast the future market development on the basis of a transparent methodology.

The operational plants and those that are currently being planned differ considerably by size and technological equipment. The more heterogeneous the waste stream to be sorted, the larger the processing plant.

The UK has the largest active plants, with an average capacity of 59,000 annual tons. The reason for this is that the separate collection is executed through a dry recyclables bin, which does not only include plastics, but also paper, metal and in some cases even glass.



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Call2Recycle and Prince Edward Island sign agreement

Canada's national consumer battery recycling organization, Call2Recycle Canada, Inc. and the province of Prince Edward Island (P.E.I.) are working together to divert even more batteries from landfill. The parties formalized an agreement in P.E.I. with Hon. Robert Mitchell, Minister of Communities, Land and Environment, and Jean-Paul Thiebolt, Eastern Canada Program director, Call2Recycle Canada, Inc.

Currently, 90 percent of P.E.I. residents live within a 15 km radius of an available drop off site. Over the next year Call2Recycle will be strategically adding locations across the island in easily-accessible places like hardware stores, electronic stores and pharmacies, government buildings, schools, and health care centers. The program will also leverage its newly-formed collaborative arrangement with the Canadian Battery Association (CBA), the stewardship organization that recycles lead-acid batteries across Canada, to make battery recycling even more convenient for P.E.I. residents.

This agreement reaffirms Call2Recycle's leadership in product stewardship – effectively diverting batteries from landfills in Canada for over 20 years. Call2Recycle has a strong track record of educating Canadians about the importance of battery recycling and how easy it is to make a big difference with a small act.

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INTERNATIONAL

British Columbia's container recycling system strong amidst concerns over fees

As it nears its half century mark, the beverage container deposit return system in British Columbia, Canada, remains the elder statesman of global recycling and extended producer responsibility programs, boasting an overall recovery rate of 84.2 percent. However, a new study by the Container Recycling Institute (CRI) raises some concerns about the system, including unprecedentedly high container recycling fees, a lack of transparency in financial reporting and a bloated reserve fund.

CRI undertook the study, titled "The Environmental and Economic Performance of Beverage Container Reuse and Recycling in British Columbia, Canada," to expand its body of research on best practices for the recovery and quality recycling of packaging materials, and to investigate recent increases in the province's container recycling fees (CRFs).

With the passage of its Litter Act in 1970 (replaced in 1997 by the Beverage Container Stewardship Program Regulation), BC became the first jurisdiction in the world to establish a mandatory refund system for soft drink and beer containers. Today, its law applies a deposit (\$.05, \$.10 or \$.20) on the vast majority of packaged beverages sold in the province. It is one of the highest performing recycling programs in the world because of its coverage of beverage and container types, convenient return-to-retail and depot consumer return options, its very high collection rate and its high use of refillable containers.

Responsibilities for the program are split between two private stewardship agencies, Encorp Pacific (Canada) and Brewers Distributor Ltd. Encorp oversees the container recovery system for all soft drinks, water and other nonalcoholic beverages, as well as all wine, spirits, beer and cider sold in non-refillable glass bottles. To cover program costs, Encorp charges consumers of these beverages a non-refundable container recycling fee (CRF). Encorp's return rate has averaged roughly 80 percent for the past 5 years.

The other stewardship agency, Brewers Distributor Ltd. (BDL), has responsi-

bility for all beverage alcohol sold in cans in the province, as well as all beer and cider sold in refillable glass bottles. BDL, whose overall recovery rate has exceeded 92 percent for the past 6 years, boasts a near 100 percent recovery rate for its refillable containers, which are moreover reused an average of 15 times before being recycled. BDL embeds its program costs in the shelf price of its beverages and thus does not charge consumers an external recycling fee.

While CRI's study acknowledges and liberally documents these achievements, it also uncovers several issues of concern:

- The combined costs for transportation and processing in BC are, on a per-container basis, more than twice as high as the equivalent line item in neighboring Alberta: \$.023 versus \$.01. Transportation and processing costs in Encorp's program exceeded \$22 million in 2013, making this the agency's second largest expense after the handling fees paid to collection depots and retailers.

- Encorp charges Canada's highest CRF of \$.35 cents for glass bottles larger than one liter. This is three times the highest fee in any other province. Furthermore, Encorp charges more for non-alcohol beverage containers under a cost-allocation practice that is highly unusual among stewardship agencies.

- The presentation of financial data in Encorp's annual report makes it impossible to know exactly how much its beverage container program costs. The report does not provide sufficiently transparent financial information to the Ministry of Environment, the agency authorized to carry out BC's recycling regulation, nor to the public. Moreover, Encorp's CRFs are determined by Encorp with no approval required by the Ministry, leaving consumers no recourse to affect change if desired.

- As Encorp's CRFs have been steadily rising, its reserve fund has grown beyond the \$17 million it has calculated as a "prudent" minimum. By the end of 2014, the reserve stood at nearly \$34 million.

Europe recycles over 66 billion bottles

The equivalent of 66 billion PET bottles were collected and recycled in 2014 in Europe, representing 57 percent of bottles and containers.

This conclusion comes from a report carried out by PCI PET Packaging Resin & Recycling Ltd for Petcore Europe from a Europe-wide survey among actors involved in the collection, sorting and recycling of PET.

Looking at the 2014 collection rates in Europe shows that with 1.8 million metric tons of bottles and containers, PET collection has grown by 6.8 percent compared to 2013.

The collection rates vary considerably across Europe, with a number of

Member States exceeding the average 57 percent while several others are still lagging behind where much more can be done and should be done.

In 2014, 1.7 million metric tons of PET was recycled in Europe. With an installed processing capacity estimated of circa 2.1 million metric, the recycling industry operating rate reached only 79 percent; lower than the 83 percent rate of 2013. This decrease illustrates the challenges that the PET industry had to face in 2014, in particular the pricing throughout the RPET (recycled PET) chain and pressure from low virgin PET resin prices that occurred during the last quarter of the year.

ELECTRONICS

Sims Recycling Solutions joins SERI as R2 leader

Sims Recycling Solutions, a provider of global IT asset disposition (ITAD) services, is partnering with Sustainable Electronics Recycling International (SERI) as an R2 leader. R2 leaders work with a team to take on a leadership project based on their organization's core competencies and sustainability goals. These projects are designed to advance responsible reuse and recycling around the world.

The leadership project that Sims Recycling Solutions is involved in will help educate and support the R2 standard in Latin America. Sims personnel will help with translations and internal audits of recycling facilities in preparation for their R2 Certification.

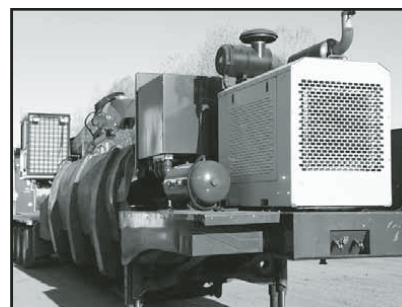
"As an R2-certified company, our team of experts have a strong understanding of the standard and can help these companies identify focus areas of their operations," stated Steve Skurnac, president of Sims Recycling Solutions. "The first step in achieving the certification is performing the gap analysis and taking action on it, and I am proud we have the resources to assist facilities in emerging markets."

In addition to the R2 certification, Sims Recycling Solutions recently received accreditations for energy management, security and occupational health and safety management. Specifically these certifications included ISO



50001:2011, BS OHSAS 18001:2007, and CAS-S certification for data destruction.

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PAPER

AF&PA releases paper reports

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

Containerboard

Containerboard production was three percent higher compared to August of last year. The month-over-month average daily production compared to July 2015 was 1.1 percent higher. The containerboard operating rate for August remained flat at 96.3 percent.

Kraft Paper

Total Kraft paper shipments were 147.2 thousand short tons, 9.4 percent higher compared to July 2014. Bleached Kraft paper shipments decreased from 10.9 thousand short tons in June 2015 to 8.6, while unbleached Kraft paper remained essentially flat at 138.6 thousand short tons. Overall, year-to-date shipments up through July 2015 were 1.0 percent higher compared to the same period in 2014. Total month end inventories increased to 77.4 thousand short tons.

Printing-Writing Paper Report

According to the report, total printing-writing paper shipments decreased 8 percent in July compared to July 2014, with inventory levels increasing 2 percent from June.

•Uncoated free sheet (UFS) paper shipments in July decreased 2 percent

compared to July 2014, with imports of UFS increasing 26 percent year-over-year in June.

•July coated free sheet (CFS) paper shipments decreased 12 percent compared to July 2014. Imports of CFS papers increased less than 1 percent in June, with exports down 15 percent.

•Uncoated mechanical (UM) paper shipments decreased 14 percent when compared with July 2014. Imports of UM papers were down 12 percent in June, the 12th consecutive monthly decline. Inventories of UM increased in July, up 10 percent.

Paperboard Report

Total boxboard production decreased 2.8 percent when compared to July 2014, but increased 2.7 percent from June.

Unbleached Kraft boxboard production increased over the same month as last year and increased compared to June. Total solid bleached boxboard & liner production decreased when compared to July 2014, but increased compared to June.

The production of recycled boxboard was flat compared to July 2014, and increased when compared to June.

Domtar wins environmental award for 2015

Domtar Corporation has been awarded the Pulp and Paper International (PPI) 2015 Environmental Strategy of the Year Award for The Paper Trail, its newly revitalized digital transparency tool. When using the tool, customers are able to learn where their paper comes from and track the gate to gate environmental impact of their paper purchase across five categories: fiber, greenhouse gas emissions, water, renewable energy, and waste.

Earlier this year, Domtar re-launched The Paper Trail, broadening its sustainability focus to also include the social and economic impacts associated with paper. The online tool showcases the people and places behind the products, featuring stories and photos from all 13 of Domtar's North American pulp and paper mills.

The Paper Trail also assesses Domtar's community investments by tracking charitable donations and volunteer efforts, such as recycling programs or educational initiatives. Additionally, it demonstrates the paper industry's local economic impact, as Domtar employs nearly 9,000 people across North America and contributes billions to local and regional economies.

The PPI Awards are held each year to recognize the achievements of companies, mills, and individuals in the pulp and paper sector, and are organized by RISI.

Doggy quotes

"Whoever said you can't buy happiness forgot about puppies." —Gene Hill

"Dogs feel very strongly that they should always go with you in the car, in case the need should arise for them to bark violently at nothing right in your ear." —Dave Barry

"I wonder what goes through his mind when he sees us peeing in his water bowl." —Penny Ward Moser

"I wonder if other dogs think poodles are members of a weird religious cult." —Rita Rudner

WASTE

Flood Brothers wins a 2015 business of the year award

The Family Business Center at Loyola University Chicago's Quinlan School of Business announced the winners of its 22nd Annual Illinois Family Business of the Year Awards. The awards program recognizes exceptional Illinois based family businesses that demonstrate a strong commitment to business development, family, and the greater-Illinois community. The annual awards drew nominations in six categories: small (companies with fewer than 50 employees), medium (50 to 250), large (more than 250), community service, dean's award, and century award. Award winners have all demonstrated positive family/business linkage, multigenerational family business involvement, contributions to industry and community, and innovative business practices and strategies.

Flood Brothers Disposal & Recycling Services was named the winner in the Medium Business Category. Starting with one truck, one employee and one simple philosophy, "Provide a great service at a fair price," the Flood Family has been in the waste removal industry in one form or another since 1930. 85 years and 5 generations later, this family owned and operated waste removal company has updated its trucks and technologies, and expanded its scope of operations, all the while remaining committed to the simple concept. They still believe in honest, responsive, hard work and its employees practice those tenets every day.

Winners in the other categories were: Small Family Business of the Year, Carl Becker & Son Ltd.; Large Family Business of the Year, O'Neil Industries Inc.; Community Service Award, Mariani Enterprises; Dean's Award, Dot Foods Inc.; and Century Award, Matot Inc.



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WASTE

Municipality of Isabela agrees to landfill settlement

The U.S. Environmental Protection Agency (EPA) and the Municipality of Isabela, Puerto Rico, have reached a legal agreement that will result in upgrades at the Isabela Municipal Solid Waste Landfill, and a plan to permanently close the landfill by June 2020. Isabela will also implement a recycling and composting program.

"This legal agreement will improve the operation and ensure the proper closure of the Isabella landfill, and will make sure more material will be recycled and composted," said EPA regional administrator Judith Enck. "It is important that every community in Puerto Rico step up its recycling and composting programs."

As part of the agreement, Isabela will establish an enhanced, comprehensive recycling program within 10 months to eliminate the landfilling of recyclable materials such as paper, metals, plastic and glass, as well as scrap tires and certain auto parts. The municipality will also establish a pilot composting program for the collection of compostable materials. As part of the initiative, the municipality will provide education and community outreach, targeting households, small businesses, government facilities and other establishments. This educational program will include community workshops to educate the public on the benefits of recycling and composting, as well as

guidelines for complying with the recycling and composting requirements.

The Municipality of Isabela has also agreed to make improvements at its landfill, including covering exposed areas on a regular basis and reducing dust. Additionally, the leveling of steep slopes at the site will decrease the chances of storm water runoff and landslides.

The landfill is scheduled to be closed no later than June 30, 2020. At that point, the municipality will take significant steps to improve the landfill, including: installing a gas collection system for reducing methane and non-methane emissions from the landfill; capping the landfill to reduce the amount of rainwater filtering into the landfill; and controlling stormwater.

The Isabela Municipal Solid Waste Landfill has been receiving waste since 1978. The majority of the waste deposited in the landfill includes solid household waste, as well as commercial solid waste and construction and demolition debris. Following inspections, the EPA determined that the landfill lacked adequate stormwater controls and a groundwater monitoring system, among other things. Groundwater beneath the Isabela landfill can flow into the North Coast aquifer system, which serves as a public water supply source for municipalities along Puerto Rico's north coast.

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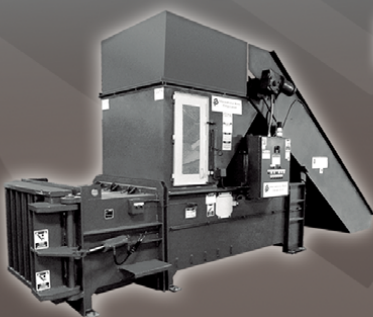
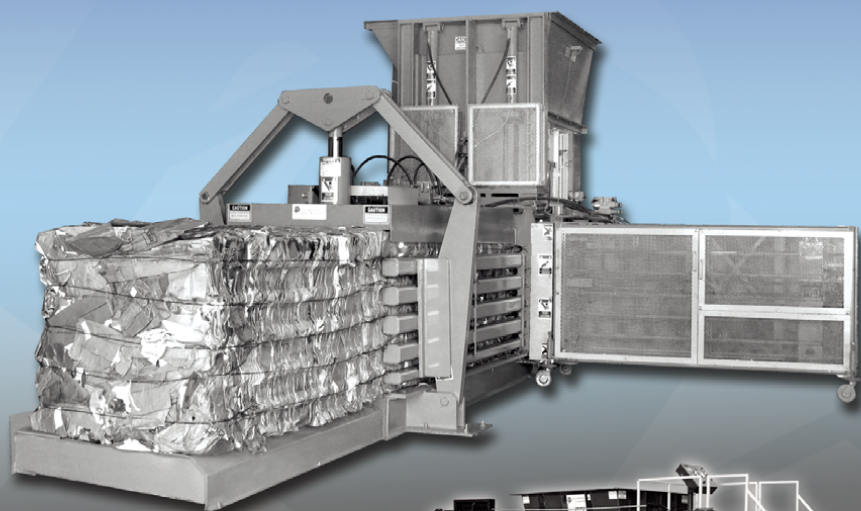
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METALS

Steel imports decrease 8 percent in August

Based on preliminary Census Bureau data, the American Iron and Steel Institute (AISI) reported that the U.S. imported a total of 3,016,000 net tons (NT) of steel in August 2015, including 2,439,000 NT of finished steel (down 8.2 percent and 6.7 percent, respectively, vs. July final data). Year-to-date (YTD) through 8 months of 2015 total and finished steel imports are 28,023,000 and 22,915,000 NT, respectively, down 2 percent and up 7 percent, versus the same period in 2014.

Finished steel import market share was an estimated 26 percent in August and is estimated at 31 percent YTD. Key finished steel products with a significant import increase in August compared to July are wire rods (up 45 percent), hot rolled sheets (up 29 percent), oil country goods (up 15 percent) and standard pipe (up 14 percent). Major products with significant YTD import increases versus the same period last year include reinforcing bars (up 51 percent), line pipe (up 40 percent), standard pipe (up 30

U.S. IMPORTS OF FINISHED STEEL MILL PRODUCTS BY COUNTRY OF ORIGIN (Thousands of Net Tons)					
	AUG 2015	JUL 2015	2014 Annual	2015 Annual Est.	% Change 2015 Annual vs. 2014
SOUTH KOREA	303	307	5,449	5,505	1.0%
TURKEY	153	258	2,199	3,030	37.8%
CHINA	157	283	3,189	2,942	-7.7%
JAPAN	215	180	2,106	2,438	15.8%
GERMANY	85	145	1,278	1,578	23.5%
BRAZIL	211	94	1,188	1,484	83.1%
TAIWAN	113	78	17,531	1,347	13.4%
All Others	1,203	1,270	810	16,048	-8.5%
TOTAL	2,439	2,615	33,751	34,373	1.8%

percent), sheets and strip hot dipped galvanized (up 19 percent), tin plate (up 17 percent), wire drawn (up 11 percent), cold rolled sheets (up 11 percent) and plates in coils (up 10 percent).

In August, the largest volumes of finished steel imports from offshore were from South Korea (303,000 NT, down 1 percent versus July final), Japan (215,000 NT, up 20 percent), Brazil

(211,000 NT, up 124 percent), China (157,000 NT, down 45 percent) and Turkey (153,000 NT, down 41 percent). For eight months of 2015, the largest offshore suppliers were South Korea (3,670,000 NT, up 1 percent), Turkey (2,020,000 NT, up 55 percent), China (1,961,000 NT, down 3 percent), Japan (1,626,000 NT, up 20 percent) and Germany (1,052,000 NT, up 34 percent).

Senator Rob Portman named "Steel Champion"

U.S. Senator Rob Portman (R-OH) was honored at the AISI's Zanesville, Ohio Works with the "2015 Congressional Steel Champion Award" from the American Iron and Steel Institute (AISI). The award recognizes Senator Portman for his dedication to and support of the American steel industry and its employees.

The award was presented by James L. Wainscott, chairman, president and chief

executive officer of AK Steel, and Thomas J. Gibson, president and chief executive officer of AISI. Also attending the ceremony were representatives from AK Steel's corporate headquarters, along with employees of the Zanesville plant, including Thomas Harlan, president, UAW Local 4104.

"AK Steel and other domestic steel-makers have faced a tidal wave of what we

believe are unfairly traded imports," said Wainscott.

AISI president and chief executive officer Thomas Gibson commented, "Senator Portman played a key role in getting recent trade legislation signed into law to improve the effectiveness of antidumping and countervailing duty laws to combat unfairly traded imports. These come at a key time for the steel industry."

Reliance Steel responds to EPA penalties

Reliance Steel & Aluminum Co. responded to the proposed penalties of \$367,500 and related commentary issued by the Environmental Protection Agency (EPA) against Reliance's Earle M. Jorgensen Company (EMJ) subsidiary. The proposed penalties relate to EMJ's participation in the ongoing environmental cleanup of sediments in a portion of the Lower Duwamish Waterway (LDW) which EPA has listed as a Superfund site. EMJ, which was acquired by Reliance in 2006, is one of more than 100 parties identified as potentially responsible for remediating sediments in the site. Despite having sold its facility within the site to a third party in 1992, EMJ has been working cooperatively for over 13 years to address contamination at the LDW Site.

Gregg J. Mollins, Reliance's president and chief executive officer, commented, "It is always Reliance's intention to comply with the law. Furthermore, EMJ's proactive cleanup efforts at the LDW Site for over a decade demonstrate our commitment to protecting the environment. EMJ has been working in collaboration with EPA to implement the agreed cleanup plan, and we strongly disagree with the assertion that EMJ has been anything but extremely cooperative, responsive and diligent. Despite this dispute, EMJ intends to continue working cooperatively with EPA and all stakeholders to get this job done."

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METALS

Metals site to be cleared

EPA has completed the “Record of Decision” (ROD) for the Nuclear Metals, Inc. Superfund Site, located in Concord, Massachusetts. The ROD outlines a detailed plan for cleaning up contaminated soil, sediment and groundwater at the site.

The ROD explains the various cleanup options chosen by EPA for the site. EPA selected a cleanup that includes excavation and off-site disposal of sediments and soils located outside of the Holding Basin, stabilization of Holding Basin soils, and containment of those soils with a vertical wall and horizontal cover. The ROD also includes treatment and monitoring of groundwater at the site. The approximate cost for EPA’s cleanup decision is estimated to be approximately \$125 million.

A remedial investigation conducted at the site was completed in April 2014. The investigation summarized the nature and extent of the site’s contamination and was used to prepare a feasibility study, completed in October of 2014, which identified all of the options EPA considered for the cleanup. The study evaluated different combinations of cleanup options to restrict access to, contain, remove, and/or treat contamination to protect human health and the environment by preventing risk of exposure from site related contaminants in the soil, sediment, and groundwater.

The ROD includes the following components:

- Excavation and off-site disposal of approximately 82,500 cubic yards of contaminated materials.
- In-Situ stabilization of depleted uranium contaminated soils in the Holding Basin using apatite injection.
- Extraction and ex-situ treatment of groundwater for volatile organic compounds (VOCs) and 1,4-dioxane.

- In-situ treatment of depleted uranium and natural uranium in groundwater.
- Long term monitoring to monitor the effectiveness of the treatment.
- Institutional controls to prevent disturbance of the Holding Basin area, prevent the use of site groundwater, and address potential vapor intrusion risks.

As part of this ROD, EPA has also decided to accelerate the cleanup of 1,4 dioxane in groundwater by initially addressing the contamination under Non-Time Critical Removal Authority. Recent sampling indicates that the 1,4 dioxane plume may be migrating underneath the Assabet River. Beginning the groundwater remedy for 1,4 dioxane before the rest of the proposed remedial action would contain this plume from expanding further, thereby avoiding the increase in time and cost for this component of the remedy. The ROD provides additional information regarding risks at the site relating to 1,4 dioxane in groundwater.

In 1958, Nuclear Metals, Inc. began operating a manufacturing facility on previously undeveloped land. The company produced depleted uranium products, primarily as penetrators for armor piercing ammunition. They also manufactured metal powders for medical applications, photocopiers, and specialty metal products, such as beryllium tubing used in the aerospace industry. Operations at the site resulted in contamination of soils, sediments and groundwater.

EPA has taken two time critical removal actions, one in 2002 and one in 2008, to address materials which presented more immediate risks at the site. In 2011, a Non Time-Critical Removal Action began at the Site to address the contaminated buildings. This removal action is ongoing.

Steel import market share at 25 percent in September

Based on the Commerce Department’s most recent Steel Import Monitoring and Analysis data, the American Iron and Steel Institute reported that steel import permit applications for the month of September total 2,891,000 net tons (NT). This was an 8 percent decrease from the 3,130,000 permit tons recorded in August and a 6 percent decrease from the August Final imports total of 3,061,000 NT. Import permit tonnage for finished steel in September was 2,226,000, down 10 percent from the final imports total of 2,478,000 in August. For the first 9 months of 2015 (including September SIMA and August final), total and finished steel imports were 30,959,000 NT and 25,180,000 NT, respectively, down 5 per-

cent and up 3 percent from the same period in 2014. The estimated finished steel import market share in September was 25 percent and is 30 percent year-to-date.

In September, the largest finished steel import permit applications for offshore countries were for South Korea (306,000 NT, up 1 percent from August Final), Japan (188,000 NT down 13 percent), Germany (153,000 NT, up 80 percent), Turkey (148,000, down 13 percent) and China (127,000 NT, down 19 percent). Through the first 9 months of 2015, the largest offshore suppliers were South Korea (3,977,000 NT, down 1 percent from the same period in 2014), Turkey (2,186,000 NT, up 48 percent) and China (2,089,000, down 11 percent).

AISI urges government to address steel issues with Chinese president

American Iron and Steel Institute (AISI) president and chief executive officer Thomas J. Gibson urged president Obama to fight for manufacturing and for steel during the U.S. visit of Chinese president Xi Jinping in September. Gibson said his group, which represents the majority of North American steelmaking capacity, wholeheartedly supports the positions outlined in letters sent this week to the Administration by nearly 70 members of the Congressional Steel Caucus, led by Reps. Tim Murphy (R-PA) and Pete Visclosky (D-IN); and by leading senators from key steel states, Sens. Sherrod Brown (D-OH) and Richard Burr (R-NC).

Gibson echoed the concerns of the members of Congress, saying, “China currently produces as much steel as the rest of the world combined. A significant amount of this Chinese steel is exported to the U.S. and other world markets which has contributed to a devastating import surge that has caused steel plants to be idled and workers to lose jobs. We know that China doesn’t play by the same rules as we do. China manipulates its currency to gain

unfair advantage in the U.S. and other export markets, and most of China’s steel industry is state owned and subsidized which has led to massive global overcapacity. The Administration cannot let the opportunity to discuss these critical issues during president Xi’s visit pass us by.”

He noted that through the first seven months of 2015, China has exported 67 million metric tons of steel, which is a 27 percent increase over 2014 figures, levels, and on track to exceed 100 million metric tons, greater than all steel production in the United States last year.

Gibson also said that China continues to “fail to abide by market principles,” and noted that AISI on Wednesday filed formal comments with the Office of the U.S. Trade Representative (USTR) regarding concerns about China’s WTO compliance. AISI’s submission emphasized that “China’s substantial, long-term breach of its WTO commitments continues to have serious consequences for American steel producers, other American manufacturers, and the U.S. and world economies.”

AR

Scrap Metals

MarketWatch



Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
#1 Bushelings	per gross ton	\$155.00	\$150.00	\$160.00	\$210.00	\$215.00
#1 Bundles	per gross ton	155.00	150.00	160.00	210.00	208.00
Plate and Structural	per gross ton	160.00	160.00	155.00	205.00	230.00
#1 & 2 Mixed Steel	per gross ton	145.00	162.00	150.00	205.00	210.00
Shredder Bundles (tin)	per gross ton	100.00	100.00	98.00	135.00	165.00
Crushed Auto Bodies	per gross ton	100.00	100.00	98.00	135.00	165.00
Steel Turnings	per gross ton	80.00	79.00	70.00	95.00	110.00
#1 Copper	per pound	2.10	1.95	2.14	2.40	2.28
#2 Copper	per pound	1.95	1.84	2.05	2.30	2.20
Aluminum Cans	per pound	.43	.44	.54	.50	.50
Auto Radiators	per pound	1.39	1.40	1.40	1.46	1.51
Aluminum Core Radiators	per pound	.42	.40	.49	.54	.48
Heater Cores	per pound	1.09	1.06	1.03	1.04	1.21
Stainless Steel	per pound	.40	.45	.47	.48	.49

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

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

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AUTOMOTIVE

Ford research center now landfill free

Ford Motor Company's Research & Engineering Center (R&E) is now landfill free, helping the automaker achieve its goal to trim waste-to-landfill by 40 percent per vehicle produced from 2011 to 2016.

The R&E Center sits on 720 acres in Dearborn, Michigan near Ford World Headquarters. With more than 12,000 employees working out of 34 buildings including research labs, design studios,

and a major data center, the campus is much like a small city. Paring waste streams will allow Ford to be more efficient while helping to improve the environment. The nearly three-year effort to achieve landfill-free status started by identifying various waste streams and categorizing them from smallest to largest.

Waste managers and environmental engineers then worked to find creative solutions to avoid using landfills while not incurring additional cost to manage the waste. The move also included recycling training for campus employees.

The Research & Engineering Center houses test operations – including a test track, wind tunnels, crash sleds and dynamometers.

The campus now diverts 230,000 pounds of waste from landfills annually.

Ford has reduced the amount of global waste sent to landfills by 50 percent per vehicle over the last 5 years.

Thirty Ford facilities no longer send any waste to landfills; this includes all Canadian and Mexican manufacturing plants.

Ford is committed to improving its environmental impact. The company is working to shrink greenhouse gas emissions from manufacturing facilities by 30 percent per vehicle between 2010 and 2025. Ford eased global water use by 30 percent per vehicle from a 2009 baseline – reaching its goal two years ahead of schedule. Since 2011, Ford has been working to trim energy consumption by 25 percent by 2016.

GLASS

Glass recycling options explored

Manufacturers using recycled glass for making new containers, fiberglass, color-coated aggregate, concrete applications and blasting medium, as well as collectors and processors of recycled glass, will all take part in discussions at the Northeast Recycling Council's Forum – Glass Recycling – Exploring Possible Solutions.

The forum is an opportunity to look at ways to bolster glass recycling and recycled glass markets throughout the region.

The event agenda focuses on exploring solutions for providing quality feedstock to end markets and growing recycled glass markets. Topics include collection methods that garner the highest quality material, processing systems that result in meeting manufacturers' material specifications, and identifying strategies for effective communication among the glass recycling stakeholders.

An added bonus to the event is two facility tours being offered by Rhode Island Resource Recovery Corporation (RIRRC) and Strategic Materials. The first stop will be at the RIRRC Material Recovery Facility (MRF) and then to Strategic Materials' new satellite recycled glass processing facility at the RIRRC compound. Strategic takes all of the recycled glass from RIRRC's MRF and uses it to make cullet for manufacturers at its Franklin, Massachusetts facility.

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

Salvaging Millions

by Ron Sturgeon
Autosalvageconsultant.com

Tools for success – an ongoing series

Be your own advocate – Get help from others

The first article in this series listed more than 25 tactics to increase your business success, all of them based on my experience. I started with nothing and didn't attend college, so I know you can achieve maximum success, regardless of your education. E-mail me to get the first article or any of the other articles in the series. Each of the articles after the first takes a closer look at one of the tactics.

Rely on peers and other professionals, including consultants, to help you. Be prudent about the costs of outside consulting, however. Much of my success in auto salvage came from ideas that I got from other operators who belonged to a peer-mentoring group I joined in 1988.

The participants in that group grew to have the largest and most successful auto salvage operations in the U.S. and all sold out for big money when public companies came looking. It was not luck or coincidence.

The members of that group had been sharing metrics and discussing the way the person with the best metric was achieving above-average success in that area twice a year for a long time when the buyout offers came. We were geographically remote from one another and had confidentially agreements, so we had no problem sharing the strategies, and tactics that we knew worked. We creamed the local competitors who were not learning from their peers at nearly as fast a rate.

You don't know what you don't know, but you can learn it from others in the same business. I currently facilitate peer-mentoring groups for auto salvage operators. I want to expand that practice to other industries because I know first-hand how well it works to explode the growth of the business owners who participate.

There are many ways to make your business better without spending much. Start by taking advantage of the opportunities to network within industry groups. Go to the state and

national conventions and take the training classes. Socialize with other operators. I have learned a lot about the business by talking with peers at the happy hours after the presentations end.

Even today, I insist that ALL my employees attend seminars and I pay for them. Investing in your people makes them feel good about themselves and the company, and they always learn something that makes them more productive and valuable.

Think broadly about training. You have employees right now who could benefit from a course in Excel or in delegating more effectively or in setting priorities. Most employees are eager to learn new skills or improve old ones. The ones who don't want training are not ones that have the right level of personal ambition for a growing firm. They likely will leave on their own or move naturally into positions of lesser importance because they lack the skills training would have given them.

If you are an employee and your boss sends you to seminars, don't forget to thank him or her. If you are not being sent to seminars, take the initiative to find one or two you would like to go to and ask. Local seminars are generally not expensive, typically about \$100 or a little more, so the cost should not be an obstacle. If your company will not support such growth, you may be working at the wrong place. Also, be sure to keep copies of the certificates you have earned and to update your resume and LinkedIn profile.

One last way to get inexpensive help – share what you know. Speak at your industry's local meeting or convention. By sharing what you know, you will become part of a circle that will cause others to want to help you reach a higher level of success.

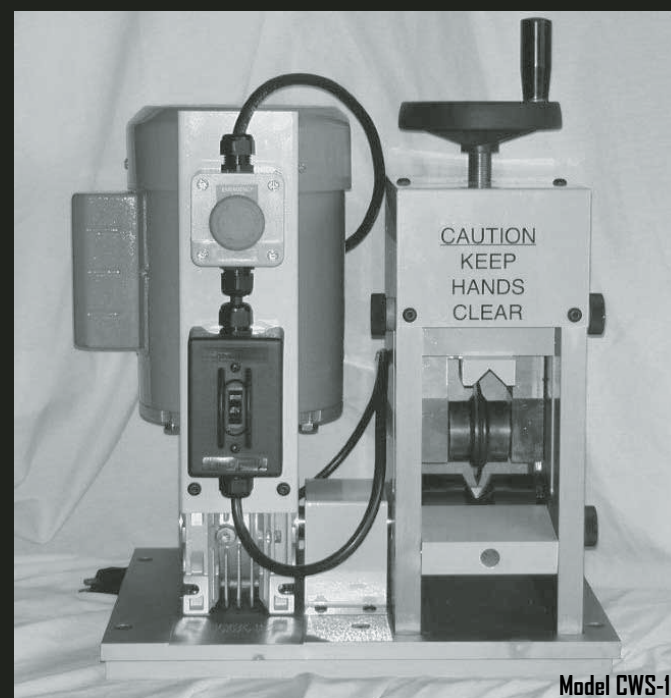
Let me reiterate one of my favorite sayings: "You don't know what you don't know". Fortunately, the world gives the ambitious lots of ways to learn by seeking help from others.

Remember, only you can make BUSINESS GREAT!

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

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GLASS

EPA requires stormwater treatment improvement

Wastewater discharged by a glass manufacturing company in Milford, Massachusetts into wetlands adjacent to the Charles River will be cleaner as a result of a recent settlement between the manufacturer and the US Environmental Protection Agency (EPA).

Ardagh Glass Inc. agreed to pay a \$103,440 penalty and to fund 3 environmental projects costing a total of about \$121,700 to settle claims it was discharging wastewater in violation of its permits.

In the settlement with EPA's New England office, Ardagh agreed to install equipment that will enhance the treatment of stormwater before it is discharged. In addition, the company will buy firefighting equipment and materials for the Town of Milford Fire Department.

EPA alleged that Ardagh, which makes glass bottles, jars and other containers, was in violation of its permits. During a September 2013 inspection of the facility, EPA inspectors found that the company was not consistently in compliance with permit effluent limitations and that the company did not comply with the conditions in its stormwater discharge permit.

EPA also alleged that the company discharged untreated process wastewater into adjacent wetlands without a permit.

CONSTRUCTION & DEMOLITION

Construction spending in August reaches highest level since 2008

Construction spending in August reached a seven year high and climbed at the fastest rate since 2006, according to an analysis by the Associated General Contractors of America. Association officials noted that growing demand for construction was likely to add to the challenges many firms are having finding qualified workers.

"There were widespread monthly and year-over-year gains in August for all major construction categories –private nonresidential, residential and public," said Ken Simonson, the association's chief economist. "Activity in all three categories

has been accelerating recently and should continue rising into 2016 – if contractors can find enough workers with the right skills to complete the projects underway and currently being designed or financed."

Construction spending in August totaled \$1.086 trillion at a seasonally adjusted annual rate, 0.7 percent higher than the July total and 13.7 percent higher than in August 2014, Simonson said. He noted that the total was the highest since May 2008 and the year-over-year growth rate was the strongest since March 2006, indicating a faster pace of construction spending overall.

Private nonresidential spending in August increased 0.2 percent from July and 16.9 percent from a year earlier, while private residential spending increased 1.3 percent for the month and 16.1 percent over 12 months. Public construction spending rose 0.5 percent from a month before and 7.0 percent from 12 months earlier.

"There has been exceptionally strong growth in manufacturing, lodging and apartment construction all year," Simonson said. "More recently, office, health care, highway and educational structures have rebounded as well."

September unemployment lowest in 15 years

The number of unemployed workers with construction experience dropped to the lowest total for September since 2000, as hiring continued to slow despite robust demand for construction, according to an analysis by the Associated General Contractors of America. Association officials cautioned that the hiring slowdown most likely reflects a lack of available workers that could lead to project delays unless more students and workers join the construction sector.

"Growth in the construction workforce has been slowing throughout 2015, just at the time that construction spending has accelerated to a multi-year high," said Ken Simonson, the association's chief

economist. "Contractors would love to hire more workers but there aren't enough qualified craft workers available."

Construction employment totaled 6,396,000 in September, the most since February 2009, but the total rose by only 8,000 in September and by 205,000 or 3.3 percent over the past year, Simonson noted.

The number of unemployed jobseekers in September who last worked in construction totaled 479,000, the lowest figure for September since 2000. The unemployment rate for such workers was 5.5 percent, the lowest September number since 2001. Meanwhile, Census Bureau data released on October 1 showed that the

growth in construction spending accelerated to a 9 year high of 13.7 percent in the latest 12 months from a 2.7 percent rate a year earlier.

Simonson pointed to a survey released in September that found 86 percent of construction firms reported difficulty filling hourly craft or salaried positions. In particular, 73 percent of firms that employ carpenters reporting trouble finding those workers. Across all 21 crafts covered by the survey, at least one-quarter of respondents reported difficulty filling each craft. Among salaried positions, 55 percent reported difficulty finding supervisors or project managers.

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BUSINESS BRIEFS

UNTHA America adds service technician

■ UNTHA Shredding Technology America, Inc. continues to grow and has added another member to its staff. Located in Hampton, New Hampshire, UNTHA America is a division of the Austrian-based UNTHA shredding technology GmbH, a provider of size reduction equipment for the recycling industry. Joining the U.S. team is Ethan Illsley as a service technician. Illsley will be trained to service the entire UNTHA line of shredding machines. He will provide maintenance and repair services, and will ultimately also have the ability to rebuild machines from the ground up should the need arise. Illsley will work out of the Hampton headquarters but will also travel throughout North America to service UNTHA clients.

Illsley is a recent graduate of the Seacoast School of Technology in Exeter, New Hampshire and is currently apprenticing under Frank Payson, UNTHA senior service technician at the Hampton headquarters. Later, he will travel to Austria for an extended training program.

Altronix appoints new regional sales manager

■ Altronix has added Adam Belkowitz as western regional sales manager.

Previously, Belkowitz had been instrumental in promoting Altronix products in California as a sales representative with Somerville Security Associates, Inc., an Altronix business partner.

NRC names 2015-2016 board of directors

■ The National Recycling Coalition (NRC) has voted nine members on to their board of directors.

The new and re-elected members will each serve three year terms.

Following are the board members:

- Stephen Bantillo, executive director, Recycling Certification Institute.
- Robert J. Bylone, Jr., executive director and president, Pennsylvania Recycling Markets Center.
- George Dreckmann, Strategic Initiatives coordinator, City of Madison, Wisconsin Streets Division.
- MaryEllen Etienne, chief executive officer, Reuse Institute.
- Bob Gedert, department director, Austin Resource Recover, City of Austin, Texas.
- Brent Hildebrand, vice president of operations, Alpine Recycling & Waste.
- Maite Quinn, business development and marketing manager, Sims Municipal Recycling.
- Lisa A. Skumatz, principal consultant/research, Skumatz Economic Research Associates and Econservation Institute.
- Melissa Young, assistant director, Syracuse University Center for Sustainable Community Solutions.

A man went to his doctor's office and reported, "Doc, I'm having a hard time controlling my bladder."

The doctor immediately barked, "Get off my new carpet!"

Hawking named Akro-Mils regional sales manager

■ Akro-Mils has named David Hawking regional sales manager for the company's Midwest sales territory. Based in the Chicago, Illinois area, Hawking will report to Doug Trasatt, Akro-Mils' director of sales and marketing.

Hawking comes to Akro-Mils as an experienced and successful sales management professional with a background in providing security-related products to the transportation, logistics and electric utility markets.

He previously was national sales manager for North America at Tyden-Brooks, Inc. in Angola, Indiana, and he had several sales positions at E.J. Brooks, Inc. in Livingston, New Jersey.

Covanta acquires two Pennsylvania companies

■ Covanta Environmental Solutions has acquired Waste Recovery Solutions, Inc. (WRS) and Chesapeake Waste Solutions, two privately held environmental services companies located in Pennsylvania. The acquisitions will expand Covanta's industrial material management network and capabilities in the Mid-Atlantic region, complementing previous acquisitions of similar businesses in the Midwest and Carolinas. In total, the acquisitions completed to date are expected to contribute approximately \$80 million of annual revenue.

These two acquisitions add four locations to Covanta Environmental Solutions' current asset base and allow for continued expansion of a comprehensive suite of environmental services offerings. These offerings include treatment, storage, disposal and recycling of industrial waste, secure destruction of consumer products, reverse distribution of highly regulated pharmaceuticals through a Drug Enforcement Agency registered site, and environmental consulting.

Lakeshore signs contract with city of Highland Park

■ Lakeshore Recycling Systems (LRS), an independent recycling and waste diversion services provider, has been awarded exclusive six year commercial and residential contracts to deliver recycling and waste collection services for the City of Highland Park, Illinois. Services begin January 1, 2016.

In 2014, LRS earned more than \$110M in revenue, largely fueled by a significant expansion of new and existing business in education, retail, municipal and residential service markets throughout Chicagoland.

LRS operates five material recovery facilities in Illinois, and is the recipient of Chicago Public Schools' coveted Best Partnership Award for suppliers who demonstrate superior commitment to students and a strong track record of collaboration.

"Give the bad news all at once, and the good news little by little."

—Machiavelli

Hoover Container Solutions acquires Tech Oil Products

■ Hoover Container Solutions, a provider of chemical tanks, cargo carrying units and related products and services to the energy, petrochemical and related industrial end markets, has acquired Tech Oil Products, Inc.

Founded in 1980 and headquartered in New Iberia, Louisiana, Tech Oil has become an integral part of the Gulf Coast business community, and a market leader for waste processing and handling equipment to the oil & gas and marine sectors globally. The company designs, manufactures, sells and rents a line of waste compacting, processing and recycling products, as well as offshore cargo equipment. Best known for their ENVIRO-PAK®, Safe-Sub®, Windchiller® and TOP Offshore Basket brands; the full product line includes over 60 products known worldwide for their reliable and safe operation.

The acquisition of Tech-Oil will firmly establish Hoover as a major supplier of waste processing and handling equipment, offshore recycling equipment, chemical, cargo and waste management tanks, baskets, containers and related accessories and services. Together they will continue to provide a diverse product range and robust services to their customers across the region and in the global energy marketplace.

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BUSINESS BRIEFS

NWRA names new VP of government affairs

■ The National Waste and Recycling Association (NWRA) has named Kevin J. Kraushaar vice president for government affairs, chapter operations and general counsel. In this role, Kraushaar will coordinate all NWRA advocacy and legislative efforts at the federal, state and local levels.

Kraushaar has more than 25 years of experience in legislative affairs and advocacy programs. He was most recently a principal in the firm J. Warren Strategies, advising associations and corporations on a wide range of state and federal legislative initiatives. Prior to that, he served as the vice president of government relations for the Consumer Healthcare Products Association, and he served on the staff of Representative Carl Pursell (MI). He began his career with the Michigan State Senate. He holds a juris doctor from University of Detroit Mercy and a bachelor degree from the University of Michigan.

Rick Merluzzi promoted to president and CEO

■ Metal Exchange Corporation (MEC) has promoted Rick Merluzzi to president and chief operating officer. Merluzzi will assume responsibility for the parent company and all of its affiliated companies: Pennex Aluminum Company, Continental Aluminum Corporation, Electro Cycle, Inc., and Metal Recovery Systems.

Merluzzi joined Metal Exchange Corporation in 2005 as president of Pennex Aluminum and later was named president of manufacturing for the entire MEC family of companies.

Before joining MEC, Merluzzi held key leadership positions with Mobil Corporation, FMC Corporation and Edlon Inc. His extensive international experience includes living and working in Europe and the Middle East. Merluzzi holds a B.S. in Civil Engineering from Pennsylvania State University and an MBA in Finance from Drexel University, with continued studies at Harvard University, Columbia University and the University of Virginia Darden School of Business. He is the immediate past chairman of the Aluminum Extruders Council and is active in a variety of charitable organizations.

Stellar announces management promotions

■ Stellar Industries, Inc. has promoted Steve Schnieders to vice president supply chain and operations. Additionally, Jim Fisk has been appointed as director of operations for both the Garner and Kanawha facilities. The director of operations position will report to Schnieders.

Schnieders has been a Stellar employee for almost 20 years. He has held the position of engineering manager, in addition to the operations manager.

Fisk comes to this position with over 20 years of experience and success with lean manufacturing in various industries, including truck and trailer manufacturing.

Burks appointed service manager at Vecoplan

■ Rick Burks has been named mobile service manager at Vecoplan LLC. In his new position, Burks will oversee all aspects of service on Vecoplan shred trucks. The move is another step in Vecoplan's commitment to continuous improvement in service satisfaction after the sale.

Working with the company's internal team of service technicians, Burks has devised and is implementing systematic procedures and programs to maximize service quality and efficiency. In addition Burks will oversee Vecoplan's network of certified shred truck service personnel throughout North America.

Burks has 31 years of experience in machinery construction, operation, service and maintenance. Joining the Vecoplan team in 2003, his tenure has included stints building shred trucks, as a field service technician, supervising the control panel shop, and as an in-house remote service supervisor. His background in motor controls, instrumentation, and controls integration includes earning an ISA Certified Controls System Technician certification.

Strongco named as new Sennebogen dealer

■ Sennebogen LLC has named one of Canada's leading distributors of heavy equipment to represent the manufacturer's green line of material handlers. Constantino Lannes, president of Sennebogen, confirmed that an agreement has been completed for Strongco Corporation to become the dealer north of the greater Montreal area and in portions of southern Quebec. The arrangement builds on the existing agreements that Strongco has with Sennebogen in parts of Ontario, New Brunswick, Nova Scotia, Newfoundland and Labrador and Prince Edward Island.

Based in Mississauga, Ontario, Strongco represents many leading lines of construction and mining equipment in every region of the country. Its sales and service branches employ approximately 750 through 27 branches in Canada. Branches serving Sennebogen customers in Quebec include Baie-Comeau, Chicoutimi, Saint-Augustin, Trois-Rivières and Val d'Or.

Strongco will also serve Sennebogen customers in the company's geographic reach in the scrap and recycling industry, steel, demolition, ports and waterways and waste-handling facilities.

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BUSINESS BRIEFS

Liebherr expands its distribution network

■ Liebherr's most recent dealer agreement with Orion Equipment will give the company responsibility for the promotion, sales and service for the full line of Liebherr earthmoving and material handling equipment in the states of Washington and Oregon; covering the region's largest metropolitan areas of greater Seattle and greater Portland.

Orion Equipment and its affiliated businesses have been representing manufacturers as an authorized dealer and distributor for more than 30 years. The company has an extensive customer portfolio operating in heavy and civil construction, logging and forestry, demolition, scrap and recycling industries combined with numerous local, state and federal governments. Offering sales, parts, equipment rental, overhaul and repair services from two locations – Seattle, Washington and Vancouver, Washington – Orion Equipment has a large inventory of construction machinery and parts.

Osborne leads Vecoplan's customer relations

■ Matt Osborne was recently appointed director of customer relations at Vecoplan, LLC.

In his new position, Osborne is charged with reengaging older customers in dialogue to determine, develop and implement best practices for all interactions between Vecoplan staff and the people they serve.

His initial focus will be the expansion of Vecoplan's factory certified parts program. The plan depends on absolute quality of information communicated, product accuracy, cost competitiveness and timely delivery. Acting as a liaison, Osborne will facilitate communication and cooperation between Vecoplan customers and Vecoplan's parts and service team. He will begin by reaching out to Vecoplan customers that have not been heard from in a while.

Osborne initiated the highly successful Vecoplan-Roadshow in his former role as a regional sales manager in Vecoplan's mobile division. During this time he demonstrated a natural talent for listening to end users of Vecoplan machinery, gleaned insights and implementing programs to increase customer satisfaction.

Prior to joining Vecoplan, Osborne was city manager at DR Horton, America's largest new homebuilder, in Greensboro North Carolina where he managed day-to-day operations, coordinating the activities of sales, construction, customer service, acquisitions and administration. He brings 11 years of sales experience to his new position.

ISRI adds Cirone as new vice president of safety

■ The Institute of Scrap Recycling Industries (ISRI) has hired Therese Cirone for the newly created position of vice president of safety, charged with leading all of ISRI's safety efforts. Cirone's responsibilities will include managing all elements of ISRI's safety program, providing safety guidance to members, serving as a liaison with OSHA and working with ISRI's team of safety professionals to strengthen and develop new tools and resources for members to enhance their safety programs.

Cirone is looking forward to working with the ISRI safety team to assist the membership in enhancing safety cultures and encouraging safety leadership throughout the organization.

Prior to joining ISRI Cirone was the vice president of health, environment, safety and security at the Chlorine Institute. Her primary responsibilities included providing leadership and support for the health and safety team, the environment and security team and associated issues and concerns in these areas along with developing guidelines, safety and health alerts, projects, regulatory updates and training seminars/workshops.

Before coming to the DC area Cirone held EHS leadership positions within various industries including RSR Corporation – a lead recycling operation – Diamond Shamrock Chemical Company/Occidental Chemical Corporation and Halliburton Energy Services.

NovX21 appoints two new board members

■ NovX21 Inc. has appointed two new board members.

Nicole Blanchard is knowledgeable about the company's project for the recovery of platinum group elements since 2013. She has extensive international experience and expertise in strategic business development in various industry sectors, namely biotechnology, telecommunications, financial services, clean tech and resources. Blanchard is managing partner of her own company and specializes in results-driven tactics to reach positive corporate results.

Yvan Tremblay has 30 years of experience in the supervision of chemical processes and more recently in plant restructuring. A technical director for Alcan and subsequently for Rio Tinto Alcan, Tremblay has worked in Quebec, Ghana and France as general manager of bauxite, aluminum and specialty alumina processing plants. Tremblay is a graduate of the General and Vocational College of Chicoutimi.



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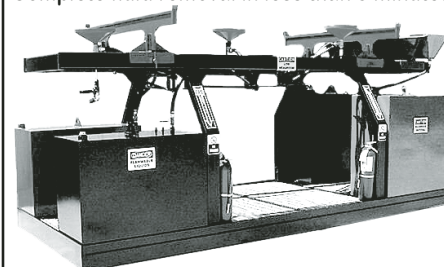
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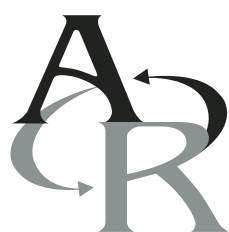
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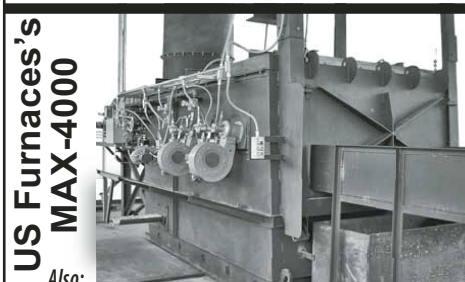
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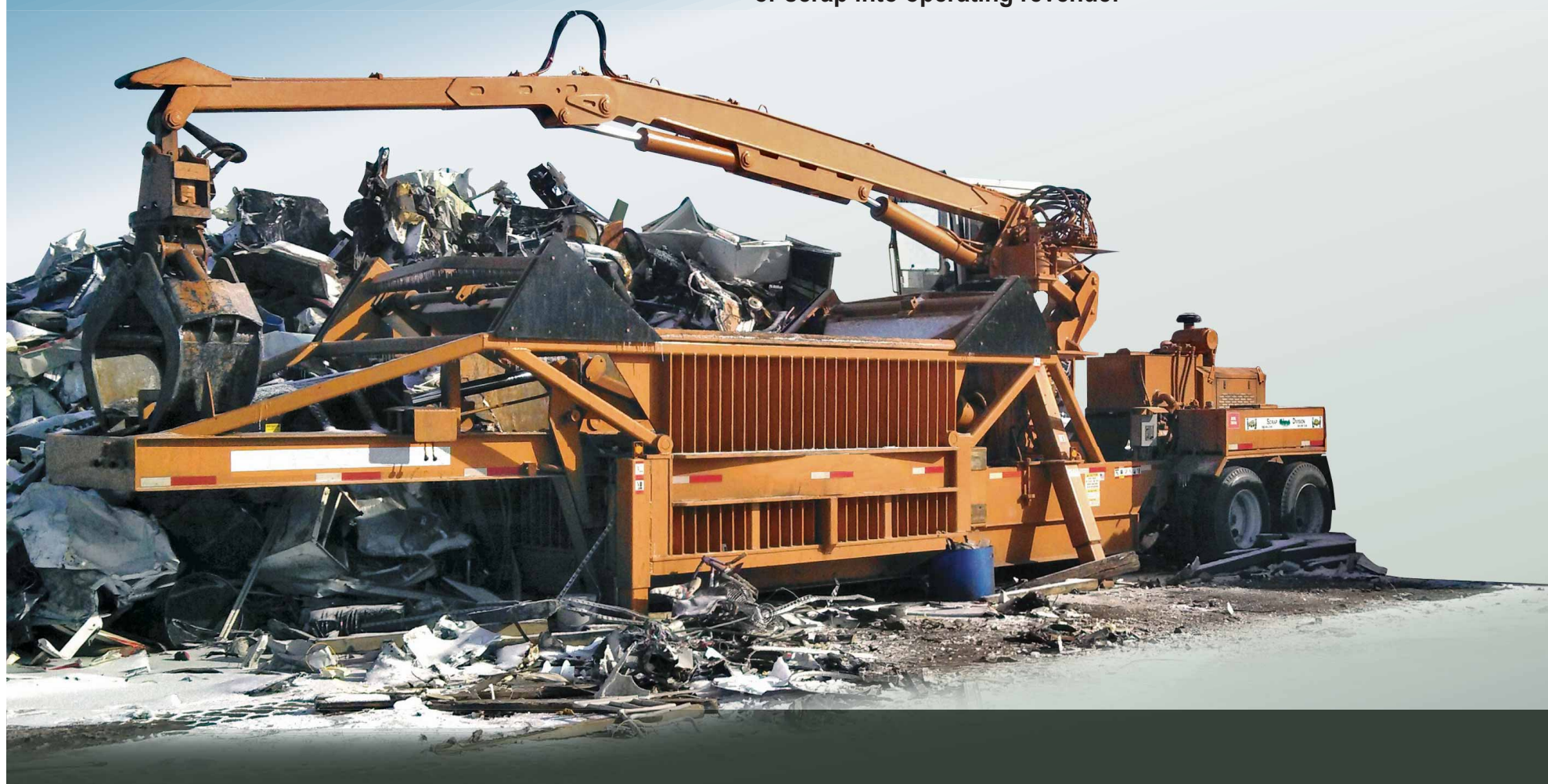
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Biomass-to-energy production evolves

by MIKE BRESLIN

mbreslin@americanrecycler.com

PHG Energy's (PHGE) downdraft gasification technology may spark a revolution in biomass-to-energy production. That's because the process is highly flexible, and with minor adjustments to equipment, can accept a wide variety of carbon-rich feedstocks such as wood chips, processed municipal solid waste, agricultural, yard and construction waste and compost. Another advantage is a 64 ton or more per day input capacity that yields a synthetic gas for energy production, and biochar, a charcoal residue that also has market value. Moreover, it's clean burning, allowing for easier permitting especially when considering the variety of feedstock it can process.

The clean burning synthetic fuel that PHGE calls Producer Gas can be piped to existing equipment where it is fired in direct heat processes such as for kilns, boilers and thermal oxidizers, or it can be further refined to produce a cleaner fuel for applications such as powering internal combustion engines for electrical generation.

For these reasons, Sevier Solid Waste, Inc. (SSWI) in Pigeon Forge, Tennessee, recently contracted with PHGE to build a new \$2.25 million dollar biomass gasification plant capable of converting compost and other biomass into thermal energy and high-value biochar.

SSWI is a wholly owned subsidiary of the towns of Sevierville, Gatlinburg, Pigeon Forge and Sevier County. Municipal solid waste (MSW) is processed through the plant, with 60 percent made into compost. The indoor garbage composting plant processes more than 100,000 tons annually from those towns and the Great Smoky Mountains National Park.

The project has been awarded a \$250,000 Clean Energy Tennessee Grant through the Tennessee Department of Environment and Conservation. PHG Energy will provide the gasifier, thermal oxidizer, material handling equipment and build the facility as general contractor.

Before selecting the PHGE system, SSWI investigated other companies over the last 10 years that used the pyrolysis processes. SSWI tested pyrolysis with two different companies, but they were cost prohibitive and not as efficient. "We wound up doing a contract with PHGE because they have a system that, in my opinion, is better than the other 10 or 15 that we looked at," said Tom Leonard, director of SSWI. "It's not complicated to operate because its downdraft gravitation, which means you are dropping material from the top, down through the gasifier. With pyrolysis and some of the other updraft systems you burn material and the gas goes up. Downdraft is better for us from a disposal perspective and in general ease of operation compared to other systems."

Since founding in 2010, the company has installed 13 commercial gasifiers in both industrial and municipal settings, and logged tens of thousands of hours in production time.

"The SSWI project is important to us for several reasons," PHGE president Tom Stanzone said. "This is our second municipal project to receive approval this year and demonstrates the confidence in our technology. It is also very important to us that we have been able to prove the commercial value of our biochar as a commodity, and that it has become a positive factor in the economic equation of our systems."

PHGE partnered with ARiES Energy, a leading provider of energy consulting services, to develop the SSWI project. ARiES has already successfully installed power monitoring and power conditioning systems at SSWI.

The SSWI Compost Plant processes over 300 tons of solid waste and biomass per day, making it the largest mixed MSW compost facility in the country. All waste is processed indoors using in-vessel digesters where a balance of heat, moisture and oxygen combined with natural organisms breaks down the organic material such as paper and food waste over a three



The PHG Energy's large frame gasification plant for Sevier Solid Waste follows the basic design shown here at a plant in Covington, Tennessee.

PHOTO COURTESY OF PHG ENERGY

day period. This material is then set in indoor windrows for 28 days to create a Grade A compost which is used throughout the southeast for farming and erosion control. SSWI plans to feed a 50/50 mixture of wood chips and compost into the gasifier.

Because SSWI is set in the middle of a large tourist and residential area, odor control is a high priority. Odor comes from both the digesters and the composting windrows. SSWI is continually looking for ways to improve their ventilation system and the new gasification system and thermal oxi-

dizer will be another step to improve air quality.

In addition to composting MSW, SSWI also recycles other materials such as plastic, glass, electronics, oil and tires. As a result, SSWI has a 70 percent recycling rate, the highest in Tennessee.

"This new installation will help us reduce the amount and cost of the compost we need to transport by truck and convert it into biochar, creating a new revenue stream for us," said Leonard. "The energy from the gasification system will be used in a thermal oxidizer to promote odor control in our

buildings and will allow us to defer other upgrades. This represents a significant savings from our current disposal and operating costs."

Chris Koczaja, vice president of engineering and implementation at PHG Energy explained their downdraft gasification process:

"Carbon rich raw material is sent up to the top of our downdraft gasifier and is gravity fed into a drying zone. Next it goes through a pyrolysis zone, and then to the oxidation layer where temperatures can reach upwards of 2500 to

See BIOMASS, Page B6

Business grants support green economy

The U.S. Environmental Protection Agency (EPA) distributed almost \$2 million to 19 small businesses nationwide to develop and commercialize technologies that tackle critical environmental problems. Bio-Adhesive Alliance, Inc. based in Greensboro, North Carolina was awarded \$100,000 for a project to convert and repurpose agricultural waste with recycled roof shingles for use in pavement construction.

Led by principal investigator Daniel Oldham, the project aims to advance a technology for treating old, tear-off roofing shingles with processed swine manure, producing a green, low-cost, durable material for pavement construction and reducing landfill and manure wastes.

Each of the 19 companies will receive a Small Business Innovation Research (SBIR) Phase I contract for up to \$100,000 to develop their green technology. When the project is commercially viable, the companies will be eligible to apply for a Phase II contract of up to \$300,000 to develop and commercialize their technology for the marketplace.

The following additional companies are receiving a phase I SBIR contract:

- Advanced Recovery and Recycling, LLC, New York, for recycling circuit board components to reduce electronic waste in landfills.

- Industrial Microbes, Inc., California, for reducing carbon pollution in chemical manufacturing using a low-cost biological solution.

- SioTeX Corporation, Texas, for reducing industrial processing pollution by harvesting silica from rice hulls.

- MicroChemica, LLC, Colorado, for designing a microchip system that analyzes and monitors airborne particles.

- Waddan Systems, LLC, California, for developing a lower cost sensor for simultaneous detection of multiple air pollutants for leak detection and air quality monitoring.

- 3D Array Technology, LLC, Connecticut, for manufacturing low-cost, ultra-efficient and robust nano-air filters to capture pollution from vehicles.

- Advanced Technologies & Testing Laboratories, Inc., Florida, for designing a self-regenerative air filter that converts harmful substances in the air into water and carbon dioxide.

- Faraday Technologies, Inc., Ohio, for developing a cyanide-free bath to treat printed circuit boards.

- TIAX, LLC, Massachusetts, for creating an environmentally benign, stain-resistant coating for textiles.

- TDA Research, Inc., Colorado, for developing a cheaper and greener polyurethane coating for the paint industry.

- dTec Systems, LLC, Washington, for recovering excess nutrients from wastewater at wastewater treatment plants.

- Green Technologies, LLC, Florida, for a sustainable nutrient removal, recovery and conversion system.

- LJJW Aquasolution, LLC, Washington, for a novel nutrient recovery system from wastewater.

- Physical Optics Corporation, California, for designing a regenerative desalination system for small drinking water systems.

- Sporian Microsystems, Inc., Colorado, for developing an in-line monitoring system that better detects a range of contaminants in drinking water.

- Metna Co., Michigan, for developing a new, sustainable and low-cost type of concrete with improved durability.

- SurfPlasma, Inc., Florida, for developing a novel method for pathogen-removal in water pipes.

University installs solar PV panels for football facilities

The Environmental Center of the University of Colorado Boulder will feature a Sustainable Game Day focus at Folsom Field and across the tailgate areas.

For over seven years, Buff fans have been participating in Ralphies Green Stampede, the nation's first NCAA Division 1 sports sustainability program.

This year, Ralphies Green Stampede is featuring a Sustainable Gameday at homecoming to thank Buff fans and celebrate:

- Achieving zero waste (over 90 percent recycling diversion rate in football).

- Becoming carbon neutral in athletics (no net emissions of greenhouse gases from all athletics facilities operations).

- Winning LEED Platinum (the highest possible rating) for sustainability in the construction of the basketball practice facility.

- Nearing completion of almost 2MW of solar PV panels on basketball and forthcoming football facilities – enough to power tens of thousands of homes.

In addition to promoting sustainability in stadium operations, Ralphies Green Stampede has promoted fans increasing their sustainability behaviors at home, work and play. This year, three new sustainability promotions will promote:

- 100 percent of plastic bottle recycling (Bring Your Bottle Back to Life!) by giving away Buff logo shirts every time the Buffs score a touchdown. The recycled plastic bottles are used to create the recycled fiber used in the shirts.

- Composting of home food waste by distributing kitchen compost containers to fans leaving basketball games.

- Conserving water – and restoring the Colorado River's water flows (the CU Water for the West campaign) by pledging home water conservation efforts and supporting restoration projects along the Colorado River basin.

Closed Loop Fund awards recycling investments

Closed Loop Fund, an impact investment fund that makes below market loans for recycling infrastructure, disclosed its first three investments to bolster recycling infrastructure and reduce the over \$5 billion dollars spent by cities annually on landfills.

The initial capital includes \$7.8 million from Closed Loop Fund, which helped unlock an additional investment of \$17 million from other public and private co-investors, totaling \$24.8 million. All three investments demonstrate replicable economic and environmental returns that recycling can bring to communities across the U.S. This is the first of over \$500 million the fund expects to unlock to invest in American recycling over the next 5 years.

In April 2014, Closed Loop Fund launched a partnership with major corporations, including 3M, Coca-Cola, Colgate-Palmolive, Goldman Sachs, Johnson & Johnson Family of Consumer Companies, Keurig Green Mountain, PepsiCo

and the PepsiCo Foundation, Procter & Gamble, Unilever, Walmart and the Walmart Foundation.

Lack of infrastructure is one of the greatest barriers to more recycling in the U.S. The Fund plans to invest \$100 million in the U.S. recycling infrastructure by 2020. The Fund invests in the form of zero-interest loans to cities and low interest loans to recycling companies to prove that recycling business models are financially sustainable.

Closed Loop Fund's first investee is a joint venture between QRS and Canusa-Hersman (CHR) to create a one of a kind plastic recover facility (PRF) in Baltimore, Maryland that will provide a game-changing solution for recycling plastics. Currently 70 percent of communities across the U.S. are not able to collect and recycle #3 to #7 plastics, like yogurt containers and take out packaging or large rigid plastics such as crates, buckets, baskets, etc.

QRS and CHS will combine technology that can both separate these products and recycle them.

The facility is able to process 4,500 tons of materials every month – double the capacity of what's currently possible in the U.S.

Beginning in October, QRS-CHR will service the majority of the East Coast, from Maine to South Carolina. The opening of the facility is expected to help divert 440,000 tons of plastics from landfills.

Closed Loop Fund's other two investments are in Quad Cities, Iowa and Portage County, Ohio. These investments will allow the two communities to convert from dual stream recycling systems to single stream, making it easier for citizens to recycle and as a result, increase recycling rates.

The potential impact of the two investments is substantial. Over the next 10 years, in Portage County alone, 37,000 tons will be diverted from landfills. Quad Cities is expected to see 86,000 tons diverted from landfills.

By 2025, Closed Loop Fund aims to do the following:

- Reduce greenhouse gas emissions by more than 50 million GHG tons;

- Divert more than 20 million tons of waste from landfills;

- Create 20,000+ jobs in the U.S.;

- Prove replicable models that will help unlock additional investments in recycling.

A Maryland couple is suing a realtor because the agent knew the home was infested with snakes, but sold it to them anyway. In fairness, what the realtor said was the place definitely didn't have any mice.

TruStar Energy opens CNG fueling station

TruStar Energy, a developer of Compressed Natural Gas (CNG) fueling stations, has opened a company-owned public CNG fueling station in Lafayette, Louisiana.

TruStar Energy has constructed numerous CNG fueling stations across the country. Building on this success, the company has embarked on a strategy to open dozens of company owned public CNG stations along high traffic U.S. corridors over the next several years. TruStar Energy opened its first company owned public fueling station in Orlando, Florida in July, followed by stations in Tulsa, Oklahoma; Houston, Texas; and now Lafayette.

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As UK winter approaches, government cuts to solar

In August this year, the Department for the Environment and Climate Change disclosed a reduction in the renewable energy Feed-in Tariff (FIT) from January 1, 2016.

Cuts to the UK FIT, which currently enables those most in need to benefit from highly efficient and cost-effective energy, could leave thousands of families struggling to heat their homes, and worsen the UK's already extremely pressing fuel poverty situation. In September 2015 at the Sustainable Development Summit in New York, David Cameron stated, "Back in January, I said 2015 should be the year we tackle extreme poverty and climate change. These two things go together and both have the potential to give security to future generations to come." This focus was set on overseas investment and funding rather than in the UK.

A recent survey by Turn2us, a national charity that helps those in financial hardship, found that nearly four in five families have struggled with their energy bills in the past year. Three-quarters of parents said that their children's health has suffered as a result, and more than half believe that it even affected their children's school work.

Currently, housing associations that choose to install renewable energy technology (like solar power) to their properties, receive money back from their energy supplier for the electricity that they generate. By effectively creating and using their own energy, tenants are able to significantly reduce their energy bills, making a huge and worthwhile difference to those who need it most. Solarplicity, with plans of over 150,000 installations over the next 2 years, including 3,000 freely allocated

systems to housing associations (equating to £1.2 million per annum in Feed-in Tariff income), the FIT has the potential to considerably reduce the number of people in fuel poverty, and even result in a CO2 reduction of 150,000 tons. But with such dramatic cuts, both housing associations and solar energy providers will be priced out of the renewable energy market. Already, two solar energy companies, Mark Group Ltd. and Climate Energy Ltd. have gone broke, meaning a total job loss of over 1,000 and huge investments gone to waste. If no action is taken, it will be the fuel poor who are left most disadvantaged.

In order to address these issues, engagement with the Government is vital – a solution is needed that will enable renewable energy industries to support housing associations in helping prevent fuel poverty to thousands of tenants across the UK. Government strategy clearly outlines the need to reduce energy costs, and with electricity making up (on average) 50 percent of household bills, cutting the Feed-in Tariff vastly contradicts these aims.

Possible solutions, moving forward, could include a capital contribution to investors who install solar panels on housing association properties, a new band of FIT for installs at housing association properties, or tax benefits for investors.

By working together to find a forward thinking and long term solution, the Government, Solarplicity and housing associations could lead the way, continuing the positive steps that have already been taken towards a more affordable, greener future, and helping to lift the UK's 2.34 million homes out of fuel poverty.

Littoral Power receives award for hydropower technologies

Littoral Power Systems Inc. (LPS), a renewable power technology developer based in New Bedford, Massachusetts, was selected to receive an award from the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy (EERE).

The EERE funding opportunity was established under the EERE's Water Power Program through the Wind and Water Technologies Office to help advance hydropower research and design techniques. A total of \$6.5 million was awarded to seven different organizations.

Through a partnership with Alden Research Laboratory, Inc., GZA GeoEnvironmental, Inc. (GZA), University of Massachusetts-Dartmouth and the National Renewable Energy Laboratory, LPS will utilize the award to develop its preliminary design for modular prefabricated dam, spillway and powerhouse sections and installation techniques. The

idea is to give rise to low-impact hydropower installations that can be easily removed at the end of their service lives with minimal ecological impacts, and allow developers to significantly improve the economics of projects.

Once a full-sized prototype is developed, the engineering team will validate structural integrity, leak resistance, and ease of installation. The technology has the potential to reduce construction and maintenance times and costs.

"We are excited to enlist the DOE's support to advance our hydropower technologies that are easy to deploy, highly cost effective and with very low environmental impacts. Our systems will allow developers to build hydropower installations that are easily permitted and economically attractive," said LPS chief executive officer David Duquette.

Alliant Energy's Solar Power Research Program includes PowerPost charging stations

Telefonix® Inc., a developer of cord reel technology and manufacturer of PowerPost commercial electric vehicle charging stations (EVSEs), has installed 13 L2 PowerPost EV chargers at Alliant Energy headquarters in Madison, Wisconsin as part of a solar power technology research program.

In order to evaluate how effective the latest solar technologies are in Wisconsin's climate, Alliant Energy is launching a solar demonstration project that will include the installation of more than three dozen unique renewable energy features over the next few years.



In phase one of this multi-year project, Alliant Energy will install solar power canopies over 50 parking spaces, solar café tables, and over 1,000 solar panels from multiple manufacturers with 11 different types of panels being used. The 13 PowerPost EV Charging Stations are being powered by the building, but the solar energy generated will offset total building consumption.

Alliant Energy's project will place solar energy features in various locations, angles and elevations to gather information on the best way to optimize Midwestern solar energy. A unique interface available both onsite and on the internet will allow anyone to view real-time performance data of the solar lab.


Party rental company completes solar installation for laundry facility

Party Rental Ltd., a full service event rental company, has completed a 200 kW solar energy system atop its laundry facility located in Teterboro, New Jersey. The system will generate nearly a third of the facility's annual electricity requirements. Party Rental partnered on this project with EnterSolar, a provider of solar solutions.

Party Rental Ltd. has a long commitment to sustainable practices. Their efforts include reducing waste and continual investments in technology to

increase operational efficiency and profitability.

The solar energy system, financed through the PSE&G Solar Loan Program, will not only yield significant financial savings for Party Rental, but notable environmental benefits as well. The energy saved by generating onsite clean electricity will produce annual environmental benefits equivalent to saving nearly 18,500 gallons of gas a year, a significant offset to Party Rental's truck fleet.



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EQUIPMENT SPOTLIGHT

Wind Turbines

by MARY M. COX

maryc@americanrecycler.com

According to data published by the Global Wind Energy Council, Asia is now the leading user of wind energy, surpassing the previous leader, Europe. The total installed capacity for Asia is projected to amount to 40 to 45 percent of the overall market by 2020. As for the other large users of this resource, Europe's usage is also expected to fulfill the Council projections for the next five years. North American projections are not as firm, due to a handful of variables involving the U.S. and Canada. Latin America is expected to make some gains in usage and Africa too, although taking a bit longer to do so, compared to Latin America. Not surprisingly, more than one company lays claim to be the leading manufacturer of wind turbines in the world, and the projections published by the Council indicate continued market growth for those who manufacture wind turbines. One of those companies provided us with a view of their particular position in the market.

"UGE International is a global leader in renewable energy solutions. We have over 2,000 projects in over 100 countries, including a recent installation of 2 VisionAIR wind tur-

bines on the Eiffel Tower. Our solutions for commercial and industrial clients include solar, wind, hybrid and energy storage solutions. Installation of some turbines can be done very quickly – often within a single day," stated Nick Blitterswyk, chief executive officer.

UGE started as a manufacturer of small wind turbines in 2008 and although UGE has transitioned to a solar and hybrid solutions-focused company, the company continues to pioneer technology in small wind space, producing turbines at their own factory.

Blitterswyk said that as a result of years of research, UGE designs and manufactures three different vertical axis wind turbines (VAWT) for commercial use:

- The VisionAIR3, the smallest turbine offered, is 3.2m high and 1.8m in width. Designed to be the lightest weight in the industry, the VisionAIR3 blades are made from fiberglass and the turbine weighs in at 274 kg.

- The VisionAIR5 is UGE's most commonly ordered and installed turbine, at 5.2m high and 3.2m in width. Similar to the VisionAIR3, the blades are made from fiberglass and weight is 756 kg. Two of these turbines currently sit on the Eiffel Tower producing 10,000 kWh of electricity each year from 400m above the ground.

- The UGE 9m is the firm's largest turbine, at 9.6m high and 6.4m in width. The blades are made from carbon fiber and fiberglass with steel reinforcement.

According to Blitterswyk, UGE turbines are the only vertical axis wind turbines with certified power curves that produce affordable energy with a small footprint. Due to the vertical axis and design of the blades,

UGE turbines are capable of capturing wind from any direction. "The design of the turbine is the most innovative in the industry with helical blades, and a double axis generator. Small wind



EWI Direct Drive Wind Turbines

turbines are ideal for use in areas with wind speeds of at least 11.2 mph, and are good for areas where limited space is a concern – for example, a roof may not have enough area for a solar array or may have limited solar resources. Unlike utility scale turbines, VAWTs are designed for producing energy to be consumed on-site," Blitterswyk stated.

He noted that energy density is a challenge in the distributed energy space, because buildings may not have enough space to install systems that can significantly offset electrical loads. The term "energy density" refers to the amount of energy capable of being generated in a given area. Blitterswyk added, "Compared to solar, VAWTs have really high energy density, which makes them the ideal choice for a variety of settings. Our turbines work atop a hotel in Miami, the Lincoln Financial Field in Pennsylvania, and for a telecom tower along the Iraqi/Syrian border in Jordan – proving that small scale wind has a variety of applications. One of the other most commonly cited concerns can involve the noise level of wind turbines. However, UGE's turbines are AWEA rated at 38 – 41 dBA, which means they are as quiet as a human whisper."

As solar power is another prominent source of renewable energy, Blit-

terswyk described some advantages of wind energy, compared to solar power: "When solar power is the only energy source in place with a given facility, two issues may emerge – along with added cost. For instance, more energy storage may be required, as sometimes there may not be enough solar insolation to offset the energy load. Solar power also may not provide the energy level needed, due to the low energy density of solar panels and the space limitation of a given project site. Our VAWT products can mitigate such problems because they provide energy when the sun is down, and have a

See WIND TURBINES, Page B5

Manufacturer List

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www.cascaderenewableenergy.com

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www.dewindco.com

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New York awards grants for clean energy

Wind, biogas-to-power, fuel cell and hydroelectric large scale renewable projects to add clean energy to state's electric grid

New York Governor Andrew M. Cuomo disclosed \$175 million in awards for five large scale clean energy projects that will help the state meet its Reforming the Energy Vision goals to increase the amount of electricity generation from renewable energy sources. The projects will reduce greenhouse gas emissions and improve the resiliency of New York's electric grid and energy infrastructure while decreasing the state's reliance on fossil fuels leading to a cleaner, healthier environment.

Once operational, the five projects will add approximately 116 megawatts (MW) of new renewable capacity, which will provide about 356,000 MW hours per year of clean renewable energy to New York – enough energy to supply over 54,000 average sized homes per year.

The projects (in order of size):

•Ball Hill Wind Farm, Western New York: RES America Developments Inc. will build a 100 MW wind farm in Chautauqua County, in the towns of Villenova and Hanover.

•Orbit Energy NYC, New York City: Orbit Energy Inc. will build a 9.6 MW anaerobic digestion biogas-to-electricity facility in Staten Island that will use food waste and other organic materials provided by area

restaurants, supermarkets and food manufacturers.

•Lyons Falls Mill Hydro, North Country: Northbrook Lyons Falls LLC will add 5.2 MW to an existing hydroelectric facility in Lewis County, resulting in a total installed capacity of more than 11 MW.

•Morgan Stanley Headquarters, New York City: Morgan Stanley will install a 790 kilowatt (kW) fuel cell in its Manhattan offices, where the technology's low emissions generation will contribute to load reduction, system reliability and cleaner electric power.

•Fulton Unit 2, Central New York: Erie Boulevard Hydropower, L.P., a subsidiary of Brookfield Renewable Energy Group, will install a new 560 kW minimum flow turbine at a hydroelectric facility in Oswego County. This unit will generate electricity using minimum flows required by the project's license, making use of this energy resource while protecting the environment.

Support for these projects is from the Renewable Portfolio Standard (RPS), an initiative that promotes the development of new large scale renewable energy resources in New York State. NYSEERDA will issue one more RPS Main Tier solicitation for larger renewable projects in 2016, expected to

be funded through the Clean Energy Fund. Under a newly established large-scale renewables proceeding before the Public Service Commission, NYSEERDA has proposed a long-term commitment to the next generation of large-scale renewables. The proposal calls for a \$1.5 billion public investment over ten years, which is comparable to the level of investment made over the past decade through the existing RPS.

For every \$1 invested in RPS Main Tier projects, New York realizes \$3 in economic benefits. More than \$3 billion of direct investment in New York State is expected as a result of existing Main Tier projects in the form of jobs, payments to public entities, in-state purchase of goods and services, and land leases.

The projects were competitively selected through the RPS process which continues to provide price stability and greater long-term certainty to contractors through contract terms of up to 20 years. This is the second solicitation for 20 year contracts. The weighted average award price for this 10th Main Tier solicitation is \$24.57 per megawatt hour of production over the 20 year terms of the awarded contracts.

Inovateus Solar installs arrays for Hoosier Energy



Inovateus Solar, a provider of solar energy services, is installing two solar arrays for electric cooperative power supplier Hoosier Energy. The arrays will serve utility customers in central and southern Indiana. The project is part of Hoosier Energy's plan to add 10, 1-megawatt arrays across member service territories.

The first project was completed in August and sits on a 9 acre site near mile marker 122 on Interstate 70 in New Castle, Indiana. The second is located along Interstate 69 near Bloomfield, Indiana, in Greene County and was completed in September. Each 1-MW solar array consists of 4,320 solar panels designed to increase power production by following the sun as it rises and sets.

"The solar program is part of Hoosier Energy's all-of-the-above strategy to provide the best balance for an affordable power supply," said Heath Norrick, Manager of Renewable Energy for Hoosier Energy.

Inovateus Solar is now collaborating with other cooperative and municipal utilities across the country.

Wind turbines

■Continued from Page B4

much higher energy density than solar panels. Solar and wind are actually complementary resources – often the sun is not shining when the wind is blowing, and vice versa. Hybrid technology that combines wind and solar, and sometimes energy storage, have already started to dominate the renewable energy world. Many sites that incorporate solar and storage rely on diesel gensets as a backup power – a dirty and expensive fuel option. Combining wind with solar technology can eliminate the need for a diesel genset and provide cleaner, less expensive energy."

Fortis, another wind turbine manufacturer, has over 6,400 of their units in place worldwide, many in locations with extremely harsh environments. The firm provides on and off grid systems along with hybrid microgrid systems, which can also be integrated with the other systems offered. On grid systems can be connected to a public distribution network. This grid connect wind turbine can reduce utility supplied electricity and excess energy may also be returned to the public utility. Local incentives may even be offered for use of such systems. Coordinating with the local utility is recommended before choosing the best system for your needs and to confirm all, relative to safety parameters. The on grid system is a

stand-alone unit that can store back up energy, charge batteries and works well for isolated areas. The turn key wind and solar systems offered by Fortis combine the two different but complementary resources and can be monitored locally and remotely.



Fortis

According to Lucienne van Oostveen, marketing and communication, EWT is a leading wind turbine supplier for distributed wind energy applications. With turbines generating electricity for customers from Alaska, mainland U.S., across Europe and through to Asia, EWT represents the technology of choice for many parts of the distributed wind energy sector. "We offer a highly efficient product range based on direct drive technology with a high yield, low cost of energy and high quality availability levels. Our company focuses on offering cost-effective energy solutions to heavy energy users, ranging from turbine supply to full energy provision," van Oostveen stated.

A mom texted, "Son, what does IDK, LY & TTYL mean?" He replied, "I Don't Know, Love You, & Talk To You Later." The mom texted back, "That's ok, I'll ask your sister, love you, too."

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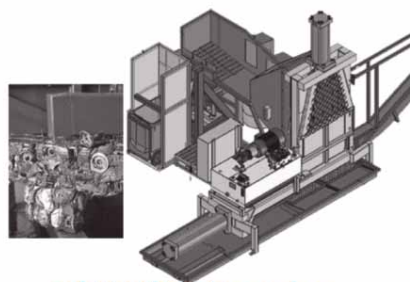
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Inovateus installs solar array

Indiana based Inovateus Solar was awarded the installation of a 2.5 MW AC, ground-mounted solar array project for Indiana Michigan Power (I&M) an operating unit of American Electric Power (AEP).

The future site of the new I&M solar array is in Marion, Indiana, adjacent to the company's Deer Creek substation. This solar project with

Inovateus marks the first for I&M. The Deer Creek solar array will encompass over 17 acres near the substation.

Once completed, the 2.5 MW array will provide the grid with the equivalent energy to power over 350 homes for 1 year. The system consists of (9) 972, 310-watt solar panels and 11 Nextronex 250 inverters.

Biomass

■Continued from Page B1

3000°F. The self sustaining oxidation layer provides heat to the other layers while remaining a starved oxygen process. The gas passes through a reduction zone after which the gas is separated from the char to be supplied to a downstream process.

"For a cold-start of the gasifier, about half the amount of a normal input load is filled along with biochar," Koczaja continued. "Then a small amount of charcoal is fired outside the vessel and inserted into the vessel to seed the oxidation layer, followed by filling the vessel with carbon rich material such as compost or wood chips. Then it's more or less self-sustaining. Once it's started and the gasifier is heat-soaked, you can turn the gasifier off by stopping the air flow and come back a day later, or two days later, and just by turning the air back on there is enough residual heat to continue processing.

"Our gasifier is different. We've patented a new form of downdraft gasifier where we do not have the throat, or hearth zone, of traditional downdraft systems. Our gasifier maintains an open throat design, so there's no physical restriction that can cause bridging problems with the material. Also, gases flow easily through the gasifier, providing more uniform distribution. That makes our gasifier design scalable. So a big advantage of ours is that it's a downdraft gasifier, yet it has a 64 ton per day processing

capacity, which is much higher than normal downdraft gasifiers."

Koczaja said his system is feed-stock flexible. Generally, the adjustments for different feedstocks are easily taken care of in the controls. Only minor changes to the equipment are required to accommodate different types of feedstocks, but generally changes to the gasifier itself are not necessary. The automation can change how it operates for different feedstocks by how the grate at the bottom is modulated, or how the air-flow is controlled in all the zones based on the carbon value and moisture content of the feedstock.

"The system is remarkably quiet," said Koczaja. "You can talk in a normal voice standing next to it. It runs cleanly and is a fundamentally different process than incineration. The majority of the maintenance is on the feedstock handling side, in addition to routine equipment maintenance. The producer gas also combusts at a lower temperature than natural gas, helping limit the formation of thermal nitrous oxide emissions."

Koczaja estimates approximately 10 to 15 percent of SSWI's processed material will result in biochar. The biochar is slated to be used for its energy value to offset coal and other fossil fuels. SSWI is working on marketing that commodity, which can also be sold as a soil amendment.

A major savings for SSWI will be in trucking costs. The farther they have to truck compost the higher the expense. The project is in the permitting phase with an operational forecast of September 2016.

A park sign said, "Do not allow your dog to chase, injure or worry wildlife." How is a dog going to "worry" wildlife? Run up to a bird and yell, "Hey, I think you've got something on your beak! It could be a tumor."

—Andy Kindler

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Wind power brought to Kenya

As part of president Obama's Power Africa initiative, the Overseas Private Investment Corporation (OPIC), the U.S. Government's development finance institution, committed \$233 million in debt financing to support construction and operation of the Kipeto Wind Power Project in Kajiado, Kenya.

The 100 megawatt, grid connected wind power facility located south of Nairobi will be, when complete, one of the first utility scale wind projects to come online in Kenya, where over 75 percent of the population still lack access to reliable electricity. Situated in an area with strong, consistent wind currents, the Kipeto project will provide cleaner and more reliable energy to Kenya's national grid, helping to further bolster the country's growing economy.

Elizabeth Littlefield, president and chief executive officer of OPIC, signed a commitment letter of OPIC's debt finance support alongside Jurie Swart, chief executive officer of African Infrastructure Investment Managers. Littlefield was in Nairobi with president Obama as part of the U.S. delegation to the 2015 Global Entrepreneurship Summit.

OPIC's financing to the Kipeto Wind Power Project also demonstrates the institution's continuing role in fulfilling president Obama's Power Africa initiative, which seeks to add more than 30,000 megawatts of cleaner, more efficient electricity generation capacity as well as increased power access with 60 million new connections throughout sub-Saharan Africa.

The Kipeto project is being developed in partnership with African Infrastructure Investment Managers, one of Power Africa's 100 private sector partners and fund advisor to African Infrastructure Investment Fund 2, Kenyan independent power producer Craftskills Wind Energy International, Ltd, and the International Finance Corporation. Craftskills initially began development of this project in collaboration with General Electric in 2010.

Duke Energy to reduce emissions from power plants

The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Justice disclosed a settlement with Duke Energy Corporation to resolve Clean Air Act violations at five coal-fired power plants across North Carolina. The settlement resolves long-standing claims that Duke violated the federal Clean Air Act by unlawfully modifying 13 coal-fired electricity generating units located at the Allen, Buck, Cliffside, Dan River, and Riverbend plants, without obtaining air permits and installing and operating the required air pollution control technologies.

Duke recently shut down 11 of the 13 units, and under the settlement those shutdowns also become a permanent and enforceable obligation under the consent decree. At the remaining two units, Duke must continuously operate pollution controls and meet interim emission limits before permanently retiring them. In addition, the settlement requires that Duke retire another unit at the Allen plant, spend a total of \$4.4 million on environmental mitigation projects, and pay a civil penalty of \$975,000. The U.S. is joined in the settlement by co-plaintiffs Environmental Defense, the North Carolina Sierra Club, and Environment North Carolina.

EPA estimates that the settlement will reduce emissions by approximately 2,300 tons per year from the three Allen units, as compared to recent emission levels. With these additional retirements, total emissions from all 13 allegedly modified units – which were in excess of 51,000 tons in 2000 when the suit was filed – will be zero.

The U.S. initially sued Duke in 2000, and trial was set to begin in October 2015 following years of pre-trial litigation, including a 2007 Supreme Court decision agreeing with EPA's interpretation of the relevant Clean Air Act regulations modifications that increase the annual amount of pollution from a plant. Under the settlement, Duke must continuously

operate existing equipment to control sulfur dioxide and nitrogen oxide emissions at two electricity-generating units at the Allen facility in Belmont, North Carolina, and meet enforceable emission limits, prior to permanently retiring both units in 2024. In addition, to help mitigate the harm from the alleged violations, the settlement also requires Duke to retire an additional unit at the Allen plant by 2024.

The settlement also requires Duke to spend at least \$4.4 million to fund several environmental mitigation projects. These projects include restoring native wildlife and plants on National Park Service and Forest Service lands in North Carolina, a program to help North Carolina residents replace higher polluting wood stoves and fireplaces with cleaner burning alternatives and a program to increase the use of clean energy and energy efficiency measures in economically distressed communities. Other projects may include efforts towards increasing truck stop electrification and electric vehicle charging stations in North Carolina.

The settlement was lodged with the U.S. District Court for the Middle District of North Carolina and is subject to a 30 day public comment period and final court approval.

Partnership to serve electric cooperatives across four states

Tri-State Generation and Transmission Association, Inc., a wholesale power supplier owned by 44 member electric cooperatives and public power districts, and D. E. Shaw Renewable Investments, L.L.C. (DESRI), executed a 25 year contract to supply the utility with renewable energy from the planned Alta Luna Solar Project to be constructed in Luna County in southwest New Mexico.

Tri-State will purchase the entire output of the 25 megawatt solar farm over the life of the contract. The facility is expected to come online in December 2016 and will receive electric service from Columbus Electric, a Tri-State member system serving approximately 3,000 members and over 6,800 meters from its headquarters in Deming, New Mexico.

The Alta Luna Solar Project is expected to consist of a single axis tracking array of over 108,000 photovoltaic solar panels located on a 220 acre site in Luna County, approximately 25 miles northeast of Deming. The project was developed by Turning-Point Energy, a Denver based energy developer, and subsequently sold to an affiliate of DESRI in partnership with Bright Plain Renewable Energy, LLC.

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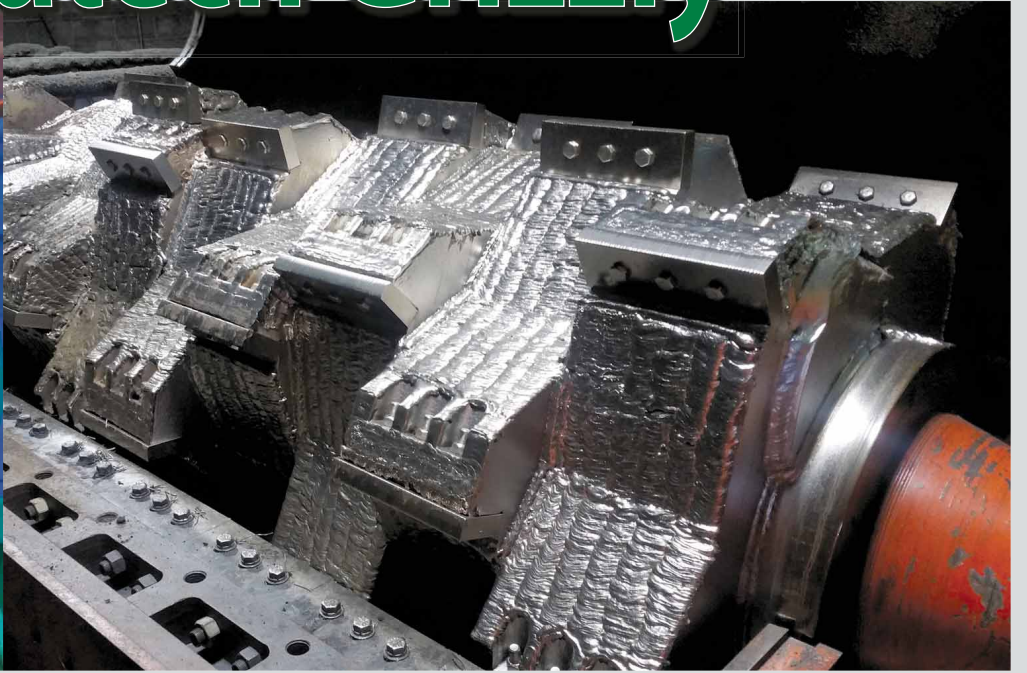
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