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Converting green waste to hydrocarbons

by MIKE BRESLIN

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PHOTO COURTESY OF GULF COAST ENERGY, INC.

Pictured left to right at the Gulf Coast Energy pilot plant are: Mark Warner, CEO, Scott Hazen, vice president construction, engineering, Eric Yonker, plant superintendent, Woody Jones, production worker, and Jimmy Edmonds, plant manager.

In April, the City of Hoover, Alabama officially became the first community in the United States to fuel their municipal vehicles with E85 ethanol made from wood waste collected from city public works projects and curbside collection of yard debris. "To our knowledge and according to the United States Department of Energy, it is the first true application where it is actually fueling vehicles," said Mark Bentley, executive director of the Alabama Clean Fuels Coalition. This coalition is among 90 "Clean Cities" state-based organizations established under the umbrella of the United States Department of Energy in 1993 to facilitate voluntary public-private partnerships to create viable markets for clean, alternative fueled vehicles.

Hoover, a suburban community just south of Birmingham is the state's sixth largest city with a population just over 75,000, but leads the state, perhaps even the nation in the per capita use of alternative fuels for municipal vehicles. Of all Hoover's municipal vehicles, 88 percent are now powered by E85 ethanol, electricity, commercially purchased B20 biodiesel and biodiesel produced from recycled cooking oil donated by citizens and restaurants.

This first delivery of ethanol to Hoover was only 120 gallons from a Gulf Coast Energy demonstration plant located in Livingston, Alabama – a baby step in what many see as a giant step forward for the United States recycling of municipal green waste via cellulosic gasification into renewable fuels. "We are doing mostly testing with Hoover's wood waste and will send them another 100 gallons during June and a few hundred more gallons along the way," said Mark Warner, Gulf Coast Energy's CEO. For the time being, Hoover is trucking its green waste 100 miles to Gulf Coast's Livingston demonstration plant. "A far shorter distance than importing foreign oil over 7,000 miles from the Mid East," said Bentley.

Meanwhile, Gulf Coast is looking for a location and financing to build a full scale production plant in the Birmingham metro area to handle Hoover's feedstock as well as draw other woody biomass from the Birmingham area. "We have plans for three, possibly four plants in Alabama and we are well on our way in establishing plants in Tennessee and Mississippi. Using technology like ours can help extend the effective life of landfills," said Warner.

Hoover Mayor Tony Petelos is the city's biggest advocate of renewable fuels and hopes that Gulf Coast Energy will soon decide on a location for a permanent, large scale plant so the city can begin to work with it. Petelos has stated that his city presently uses approximately 240,000 gallons of E85 annually and generates approximately 1,800 tons of wood waste a year, enough feedstock to produce roughly 350,000 gallons of E85 annually.

Gulf Coast Energy's technology is based on the Fischer-Tropsch process that dates back to the 1920s and was extensively used by Germany during

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Cash for Clunkers bill creates more problems than it solves

The "Cash for Clunkers" bill, passed by Senate on June 18, has a catchy name and to many, it sounds like a good idea for helping Detroit and stimulating the economy. Unfortunately, when you take a closer look, it quickly becomes apparent that passage of this bill will create more problems than it solves. For that reason, the United Recyclers Group (URG) opposes the Cash for Clunkers bill because it contains clauses that will remove auto parts and components such as engines and drive train parts from the inventories used by millions of middle class Americans to repair their cars.

"The Cash for Clunkers bill is supposed to help Detroit sell more cars," said Michelle Alexander, executive director of URG, but she added that "any gains made by the Big Three as a result of this bill will come at the expense of many regular people who are just trying to keep their cars running and cope

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Green waste is key in high tech compost

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World War II to convert coal into synthetic fuels. Since then, the process has been improved and Gulf Coast Energy holds licenses to use the latest patents.

Gulf Coast takes in Hoover's pre-chipped material, essentially wood and leaves. "Hoover does a very good job of separating the woody biomass from grasses, so we don't see much grass. There's occasional metal, like cans, but we have magnets to separate that out," said Warner.

As Gulf Coast Energy expands, it plans to do its own chipping. That's why it is looking to site its new plants at mothballed chipping and saw mills. There are many of these dormant mills available throughout the southeast due to the loss of paper and pulping operations to foreign competition.

The first step in the Fischer-Tropsch process is to take the chipped material and grind it down to a one-quarter inch size. "In our model woody biomass is most readily available here in the southeast, which is essentially a huge pine forest. It's very easy to handle and there's already an infrastructure for handling it. We can also handle landfill waste, pump sludge and switchgrass." Warner said. "It's been put out into the general literature that there is not enough corn and soybeans to fuel the country and I agree with that, but there's more than enough woody biomass and landfill waste to fuel the country. And if we want to get serious about it, we can."

PHOTO COURTESY OF GULF COAST ENERGY, INC.

Product drums filled with fuel from Gulf Coast's plant display the colorful signage used by the organization.

The use of cellulose to produce ethanol is considered the "second generation" feedstock in the United States – corn being the first. Gulf Coast Energy and other entrepreneurial chemical companies are looking at making cellulosic ethanol from biomass as a threshold product. The catalytic chemical process employed, however, is aimed at a larger objective, reconfiguring molecules into what the Department of Energy classifies at "renewable fuels," which are biomass-derived hydrocarbons beyond ethanol like kerosene, diesel, gasoline and jet fuel. Gulf Coast, for example, believes that its patented technology takes advantage of the latest advances in carbon re-circulation and waste heat re-use to produce extraordinary yields, high energy efficiency and superior quality biofuel products. Further, the process is a continuous process as opposed to a batch process and is flexible enough to handle multiple types of feedstock to produce a variety of different kinds of biofuels.

In the basic Fischer-Tropsch process (using ethanol as an example of an end product) wood waste goes into a reformation unit where it is converted to gas. An off-stream of mixed alcohols is either directed back to the gasifier to help fuel it, or sent to a raw material dryer. The gas then goes to a Fischer-Tropsch reactor where it distilled and condensed to make the final product, ethanol. Ethanol is then mixed with gasoline with the ethanol component representing from 70 to 83 percent of the mixture to qualify at an E85 fuel. To date there are approximately 1,900 filling stations in the United Sates pumping E85, but more are on the way as E85 production increases and more municipalities switch to E85.

The City of Hoover is running 181 vehicles on E85 and has centralized fueling for its municipal fleet, including a 12,000 gallon E85 tank and pump. Hoover was one of the country's earliest municipal users of E85 and has been working closely with General Motors (GM) for the past five years on a test program for engine performance burning E85. "We are the largest GM E85 municipal law enforcement fleet. So we sent a sample of the Gulf Coast Energy ethanol for testing to GM before we used it and it met their specifications. The 120 gallons we ran in our vehicles ran perfectly – no problems," said Dave Lindon, Hoover's fleet management director.

According to the U.S. Department of Energy, about two-thirds of what we throw into our landfills today contain cellulose and is a potential source of fuel. More importantly, cellulosic ethanol yields roughly 80 percent more energy than is required to grow and convert it. A demonstration project such as the partnership between Hoover and Gulf Coast Energy may prove to the investment community that this technology is economically viable for large scale production of renewable fuel. When oil was at $150 a barrel, interest in renewable energy was at an all time high, but when it fell below $34, investor confidence in renewables fell with it. Now oil prices are climbing again and cellulosic fuels may play an important role in our national energy solution.

In areas that have abundant supplies of fast growing conifers, municipalities are challenged to dispose of huge quantities of waste wood, not only from curbside collection, but from massive downfalls caused by periodic storms and from commercial companies clearing land for development. Green waste can be viewed either as a problem for landfills, or as an unexploited natural resource that can be converted into renewable fuels. "We don't produce corn, but we can grow pine trees," said Mark Bentley of the Alabama Clean Fuels Collation. "If we can establish a few large scale plants in Alabama to convert tree waste into cellulosic fuels it can be used to power entire fleets."

Sebright works despite fire

Sebright Products, a manufacturer of industrial trash and refuse equipment, located in Wayland, Michigan reported a tremendous fire in May that engulfed their engineering design department building. In addition to their engineering-design offices, it also damaged some manufacturing space. Sebright announced that though there were 35 employees at work at the time of the fire, there were no injuries.

The fire spread rapidly and the building was a total loss. The local fire department is investigating the cause of the blaze. Both recycling and compaction equipment were manufactured in the production portion of the facility. Sebright recently completed a new painting facility which moved any paint and chemicals to a different location.

Brent Sebright, president, has said, "The fire will not impact staffing levels. In fact, all employees reported for work at the start of business on May 20. We have adequate production space to move the workers from the building that burned into our other production facilities. We will start additional shifts if necessary, but feel that our other three production facilities in the West Michigan area can handle the influx of workers."

Our customers will not notice any impact from the fire thanks to our dedicated staff and our management's forethought. Projects in production will deliver on time. Those customers with any questions should contact their salesperson, or e-mail Brent Sebright directly at brents@sebrightproducts.com.

The engineering-design offices have been moved to temporary quarters in another building within the same complex, and are already up and running.

San Francisco recycling hits highest rate in the nation

Mandatory construction debris recycling accounts for lowest tonnage landfilled in over 30 years

The City of San Francisco and its residents are closing in on the city's goal of 75 percent landfill diversion by 2010. New statistics show that the city kept 72 percent of all recyclable material from going to the landfill, up from 70 percent the year before. The most significant gain was in the area of recycling material from building sites, thanks to the city's 2006 Mandatory Construction and Demolition Debris Recovery Ordinance.

"By requiring builders to recycle debris from construction projects, we were able to divert tens of thousands of new tons of material away from the landfill," said Mayor Gavin Newsom. "Clearly, mandatory recycling measures pay off; if we're going to reach a recycling rate of 75 percent in 2010 and zero waste by 2020, we need to make sure that residents and businesses are taking full advantage of our composting and recycling programs."

The figures compiled by the City's Department of the Environment (SF Environment) show that San Francisco generated 2,100,943 tons of waste material in 2007. Of this, only 617,833 tons went to landfill, the lowest disposal rate since 1977.

The increased recovery of construction and demolition debris is a positive trend. However, SF Environment data shows that over two-thirds of the landfill-bound material was recyclable, with nearly 40 percent consisting of mixed compostables (mostly food scraps and soiled paper), 15 percent recyclable paper, and 15 percent other mixed recyclables.

"If we captured everything going to landfill that could have been recycled or composted, we'd have a 90 percent recycling rate" observed SF environment director Jared Blumenfeld. "The Board of Supervisors will soon be considering an ordinance that will require residents and businesses to sign up and use the recycling and composting programs, which we need to make our goals."

Mandatory recycling is an established best practice in the field of waste management, and many governments have mandated recycling various materials, or conversely banned them from landfills. Major cities including Seattle, Pittsburgh, Honolulu and San Diego have successfully implemented mandatory recycling programs. Garbage collection has been mandatory in San Francisco since 1932.

California Waste Solutions and American Metal and Iron fined

Two large providers of waste management services in the Bay Area in California have settled with the United States Environmental Protection Agency (EPA) for numerous violations of the Clean Water Act. California Waste Solutions, a company that provides waste management services for large portions of Oakland and San Jose will pay a $261,400 penalty. San Jose based scrap metal recycler American Metal and Iron, Inc, will pay a $45,000 penalty.

In September 2007, the EPA filed complaints alleging that California Waste Solutions had violated its permit, discharging waste and other pollutants into nearby waterways at three facilities during the previous five years.

In September 2008, the EPA had also filed a complaint alleging violations at two American Metal and Iron, Inc. (AMI) facilities in San Jose. Violations at AMI include discharges of storm water without a NPDES permit and failure to comply with permit terms after obtaining coverage. Violations of the permit's terms include failure to monitor storm water discharges and failure to implement adequate controls to prevent the discharge of pollutants into nearby Coyote Creek.

The Clean Water Act requires waste management companies to have controls in place to prevent pollutants from being discharged with storm water into nearby waterways. They must have a storm water pollution prevention plan that sets guidelines and best management practices to follow, to prevent runoff from being contaminated by pollutants.

Caraustar files for reorganization

Caraustar Industries, Inc. has reached agreement with holders of approximately 83 percent of its 7 3/8 percent senior notes that matured June 1, 2009 and 91 percent of its 7 1/4 percent senior notes maturing May 1, 2010 on the terms of a cooperative financial restructuring that would reduce debt obligations by approximately $135 million. The company and the consenting noteholders have entered into an agreement to complete the restructuring through a pre-negotiated plan of reorganization.

Under the plan, holders of outstanding shares of Caraustar's common stock will receive their pro rata share of $2.9 million, or approximately $0.10 per share, subject to certain conditions contained in the plan. In addition, the plan contemplates the exchange of the company's existing 7 3/8 percent and 7 1/4 percent senior notes for an aggregate of $85 million in new senior secured notes and 100 percent of the common stock of the reorganized company. The reorganized company is expected to emerge as a private entity with Wayzata Investment Partners LLC becoming the company's controlling shareholder.

A key feature of the plan is that all entities involved will receive all amounts owed to them. The company is seeking authority from the Court to pay these amounts in the ordinary course of business.

Big Green Bus begins cross-country road trip

A 1989 MCI motorcoach (left) was purchased and retrofitted for the 2009 summer tour. A new paint job and inside remodeling were needed.

Dartmouth students make the annual trek through 40 states

A team of 15 Dartmouth College students arrived aboard The Big Green Bus, A Vehicle for Change in New York City, June 17.

This first stop on a 12,000 mile summer road trip served as the unveiling of the team's solar-paneled, waste vegetable-fueled bus, a state-of-the-art 'green' mobile classroom. The coach bus is sponsored in part by Newman's Own, Inc., and is open to the public for educational experiences and one-on-one conversations with team members.

The Big Green Bus team delivers messages pertinent to five key areas on their 40-state, cross-country trek: 1) reduction of consumption and recycling; 2) energy efficiency; 3) clean and renewable energy; 4) wise food choices and 5) personal actions through voting. Each educational objective was reinforced by presentations delivered by the informed team members and communicated through hand-out literature as well as informational materials posted on the bus.

Renewable energy-powered wi-fi on the bus enabled anyone to interact with the students in real time and participate online in the summer tour at www.changents.com/biggreenbus where the crew will file regular story updates from the road such as blogs, podcasts, photo galleries, videos, Tweets and action opportunities.

Other Big Green Bus lead supporters include Waste Management, The Timberland Company and Changents.

Waste Management opens Detroit Recycling Center

150 tons of recyclables to be managed daily

City of Detroit officials, Wayne County executive Robert Ficano and Waste Management (WM) chief executive officer David Steiner celebrated the opening of the Detroit Recycling Center (DRC), a 63,000 square-foot facility on Lynch Road that will manage recyclables for southeast Michigan commercial businesses and residential households.

Waste Management invested $2 million to renovate the building and installed equipment capable of processing up to 150 tons of recyclable material each day. To begin operations WM will employ six persons.

Initially, the DRC facility will manage cardboard, office paper, shredded paper and industrial plastics from Waste Management's southeast Michigan customers. The company hopes to expand the facility's operations to accommodate additional materials, including materials from the upcoming City of Detroit pilot recycling collection program.

Waste Management serves many private businesses in Detroit and currently provides significant levels of solid waste services for the Department of Public Works, Greater Detroit Resource Recovery Authority and the Detroit Water and Sewerage Department. One of the company's major facilities, featuring a transfer station and hauling company, has operated continuously in the City of Detroit for more than three decades.

Upon arrival at the Detroit Recycling Facility, all trucks are weighed to determine the amount of recyclable material being delivered for processing. These truck scales are connected to computers that automatically record the weights for the trucks and the amount of materials in them. After weighing in, trucks then proceed to the tipping floor to unload their materials. Recycled materials are pushed onto a 30 foot-long conveyor system that feeds into elevated sorting equipment.

The 25-foot high sorting equipment passes the material over a series of specifically spaced angle screens and large fingered spinning discs to further sort the materials.

The materials are then moved to a large industrial baler to compress the various grades of products into bales weighing up to one ton (2,000 lbs.) to allow for easier storage and handling. The balers compress the material into a rectangular chamber and mechanically wrap several metal straps around the bale to hold it tightly together before ejecting a perfectly formed rectangular bale that is stackable and ready for shipment to market.

Clunkers

■Continued from Page 1

with the current weak economy." She continued, "the auto recycling industry will feel the pain almost immediately, because our supply of auto parts will decline, and that means prices will climb and the cost of auto repairs nationwide will be driven upwards. Surely that isn't what congress wants to happen."

"The inspiration for Cash for Clunkers is coming from overseas," said John Fischl, president of Riteway Auto Parts, and a URG manager. "Driving a car is more of a privilege in Europe than it is in America, and the Europeans take measures to keep any car more than a few years old off the road. In Europe cars are completely recycled after a few years, whereas here in America we have a different process, reusing many parts from a car being scrapped, and recycling what remains."

Fischl continued, "By stipulating that engines and drive trains cannot be resold, Cash for Clunkers will negatively impact the supply chain for these part categories. As the inventory of these targeted used parts available for repairs declines and then disappears, many Americans who depend on cost-effective repairs and cannot afford a new car may be forced to go without their transportation!"

"The average Joe is going to be hurt by the Cash for Clunkers bill because it will remove the average cars they drive from the road" said Bill Abold Jr., owner of A&P Auto Parts. He runs an auto parts business and an auto salvage operation, and sells both new and used parts, so he sees both sides of the issues. He said that "A lot of people simply can't afford to repair their cars using new parts. They certainly can't afford to buy a new car right now, even with a federal voucher for a few thousand dollars. So if these millions of middle class Americans can't afford to fix their cars or buy a new one, where does that leave them? If it passes I predict that this bill will have many unintended negative consequences."

Desperate to keep afloat, the Big Three auto manufacturers and labor unions are pushing hard to get a version of this bill passed. "The environmental costs of new parts manufacturing are far higher than the use of green parts, which are reused," said Richard Filley, executive director of the GreenCARR Foundation, a not-for-profit organization promoting the use of green auto parts, green automobile usage and green auto industry practices such as recycling. Filley said that, Cash For Clunkers runs roughshod over the environment by removing earth-friendly green parts from the supply chain and replacing them with new parts and new cars made at a high cost to the environment, in terms of the energy used, increased CO2 carbon emissions, natural resources consumed and more. Cash for Clunkers is clever marketing but bad for consumers."

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California paint recycling project assisted with grant

San Joaquin County, California, is developing a statewide paint stewardship program aimed at reducing the 8 million gallons of leftover paint Californians generate annually.

Through a $400,000 grant from the California Integrated Waste Management Board (CIWMB), the California Paint Stewardship Program will teach consumers how to buy the right amount of paint, properly store leftovers, and provide reuse and recycling options. For paint that cannot be reduced or reused, the project goal is to increase collection of unused paint for recycling and stimulate the recycled paint market.

Studies show that many consumers purchase too much paint, leading to large volumes of leftover paint. California local governments spend approximately $16 million annually to collect unused paint through Household Hazardous Waste (HHW) programs. Taxpayers and garbage rate payers spend about $8 per gallon to operate these programs. Because of the high cost, the CIWMB is interested in finding long-term solutions that will reduce system costs by addressing source reduction first, then reuse and recycling.

San Joaquin County will collaborate with Tehama and San Francisco Counties to implement the project, which will build on progress from the National Paint Product Stewardship Initiative. The project will educate retailers, consumers and governments about estimating the correct amount of paint for purchase, opting to buy recycled paint and participating in paint exchanges. Partners include Visions Paint Recycling, the National Paint and Coatings Association, and other experts.

For project contact information, view this article on www.AmericanRecycler.com.

Retired recycling manager wins 2009 Sami Izzo Recycler of the Year Award

The Northeast Resource Recovery Association (NRRA) announced Francis Horne as the 2009 Sami Izzo Recycler of the Year.

His outstanding efforts and passion for recycling earned him this award.

In his 20 plus years at the Moultonborough Transfer Station, Francis Horne has seen the changes from landfilling to the present practice of recycling. He oversaw his landfill reclamation project and he made sure business ran by the book as to not let something like this happen to his town again. Even though Horne is “semiretired”, he continues to be a valuable resource to Moultonborough and the surrounding communities.

This award is given annually to an individual who, like Sami Izzo, combines the qualities of commitment, creativity, leadership, enthusiasm and flexibility in developing and sustaining an environmentally and financially sound solid waste management program.

The NRRA is a proactive, non-profit working with its membership to make their recycling programs strong, efficient and financially successful.

Largest recycling facility in Texas opens for business

Houston-based Greenstar North America, the country’s largest private processor of recyclables and the largest municipal recycler in Texas, announced that it has opened the largest recycling facility in Texas. The new plant is among the largest, most automated single stream facilities in North America. It has the capacity to process 20,000 tons per month at its 180,000 square foot facility located on nine acres in San Antonio.

Greenstar has experienced a dramatic rise in recycling rates across its Texas markets, particularly in San Antonio. San Antonio rates have increased as high as 200 percent over the previous collection approach in some areas. The sharp increase is a direct result of the city implementing a single stream collection system as well as converting their existing 18-gallon collection system to 95 gallon carts. Single stream processing lets participants put recyclables conveniently into one bin, allowing for more efficient collection of materials and a decrease in labor.

While Texas has not traditionally been known for its recycling programs, Greenstar sees that perception shifting in the near future. Greenstar selected Texas as its North American headquarters recognizing there is a significant amount of potential on the commercial and municipal side for growth in recycling. Greenstar’s level of investment has been significant: it invested over $300 million in its United States recycling business over the last two years, of which $50 million has been invested in Texas.

Georgia starts recycling education campaign

Program targets nonrecyclers

Georgia non-recycler, Tommy Krenshaw and his reason for not recycling was introduced in a new statewide education campaign. Tommy proudly proclaims to all who will listen that he will find a new planet when this one fills up with the materials he and others like him refuse to recycle. He has also taken to wearing his non-recycler status on his T-shirt, in case you missed his excuse.

Sound absurd? Well, mission accomplished. Tommy is just one of the unwitting (albeit fictitious) characters of a new recycling awareness campaign created by the Georgia Department of Community Affairs (DCA). The campaign shines a spotlight on these, and other misperceptions, to show what non-recyclers might look like to their friends and families. By highlighting the absurdities behind not recycling, the campaign responds on behalf of the rest of us with “you gotta be kidding!”

“Every time someone bypasses a recycling bin or chooses to throw a can away,” Randy Hartmann, the director of the Office of Environmental Management of DCA explains, “they’re effectively saying, ‘I don’t recycle!’

“They’re wearing their apathy on their sleeve. What we’re saying is that these excuses won’t work anymore.”

“The absurd nature of what these characters say contrasts sharply with the many rational reasons to recycle,” added Hartmann. “Because, unlike what Tommy may say, we can’t just find somewhere else to live when we have used up our natural resources. People interacting with the campaign will come away thinking that, in light of these preposterous alternatives, recycling is a pretty simple proposition.”

The need for the campaign came from a Solid Waste Characterization Study which revealed that approximately 40 percent of what Georgians throw away is actually recyclable. These findings were amplified by a recent DCA survey which showed that a whopping 45 percent of Georgians do not regularly recycle.

Through a media relations and marketing campaign, DCA will drive Georgia residents to the campaign website where the real facts about recycling will be presented in a way that resonates and drives real action. The campaign will target all non-recyclers, but with a special focus on the 25- to 34-year-old group. Research revealed that this group is the least likely to recycle, but also tend to be the easiest to motivate.

Local communities will also take part in the campaign, bringing the characters to life through billboards, in a radio PSA, on coasters in restaurants and in many other ways.

Manager: "For a man with no experience, you are asking for a high salary."
Applicant: "Well, the work is harder when you don't know what you're doing!"

Ohio's Memorial Golf Tournament goes green

Tournament officials announced that the Memorial Tournament, held in Ohio, has initiated a major green effort beginning in 2009. The Memorial has partnered with FirmGreen to help manage its green efforts and with The Solid Waste Authority of Central Ohio (SWACO), for all of its recycling and waste management needs.

Biodiesel will be used for power generation during the Tournament. Fans who take the 'FirmGreen Shuttle' from the Columbus Zoo parking lot to Muirfield Village Golf Club will be riding a bus that runs on compressed biogas produced from landfill gas at the local SWACO landfill.

"The Memorial has worked hard over the past couple of years to understand how to best dispose of the nearly 100 tons of waste it generates per year," said executive director Dan Sullivan. The Tournament recognizes its responsibility to the central Ohio community to keep the environment safe and clean."

As a function of the Tournament's green initiative, recycling receptacles will be available on the entire property at Muirfield Village Golf Club. Additionally, all generators for the Memorial will use biodiesel fuel and the FirmGreen shuttle will run on compressed biogas – or CNG, a clean biofuel produced from landfill gas at the local SWACO landfill. As a final piece to the Tournament's green effort in 2009, all signage and trash bags used for the Memorial Tournament will be made from biodegradable materials.

Tetra Tech completes acquisitions

Tetra Tech, Inc. announced that it has acquired three companies that expand its geographic coverage and technical services.

Tesoro Corporation is a construction management firm that works primarily for the United States Department of Defense (DoD) on Base Realignment and closure and military construction programs. Based in Virginia Beach, Virginia, Tesoro has revenue of approximately $80 million per year.

"Tesoro holds over $500 million in contract capacity that will help improve Tetra Tech's positioning for certain DoD economic stimulus projects," said Dan Batrack, Tetra Tech's chairman and CEO.

Tetra Tech also recently acquired and integrated two highly specialized companies. Mussetter Engineering of Fort Collins, Colorado, provides expertise in water resources, fluvial geomorphology, and environmental hydraulics. ACI Engineering of Vancouver, British Columbia, provides high voltage power engineering to support energy transmission. Together, Mussetter Engineering and ACI Engineering have about $5 million in annual revenue.

Tetra Tech did not disclose the terms of the acquisitions.

Electrical consumption to be reduced by new solar-powered wastewater treatment plant

Vanguard Energy Partners announced the completion of a 578kW solar photovoltaic system at the Morristown Wastewater Treatment Plant.

Vanguard teamed with Ferriera Construction on the project which features multiple ground and roof-mounted arrays, including an innovative solar canopy structure that was erected over a filtration tank to maximize space. The installation consists of 2,886 Kyocera Solar and BP Solar Modules. Site work, civil engineering and steel erection were provided by Ferreira Construction Company, Inc.

The solar installation will produce approximately 635,800 kWh or 40 percent of the electricity needed to operate the waste water treatment plant from the clean, renewable power of sunlight. The system is expected to save the town a minimum $90,000 a year. The project was made possible by a $1,464,734 incentive rebate from the New Jersey Clean Energy Program. The solar installation saves Morristown taxpayers money by generating electricity that not only powers the wastewater treatment plant, but also increases revenue by selling Solar Renewal Energy Credits. The project will pay for itself in less than eight years with energy savings and SREC revenues.

Oregon commission adopts stringent pollution controls for PGE's coal-fired power plant

Plan put in place to reduce haze pollution

The Environmental Quality Commission, DEQ's policy and rulemaking board, approved rules adopting Oregon's Regional Haze Plan that includes requirements for stringent pollution controls for Portland General Electric's Boardman coal-fired power plant. This decision will result in significant visibility improvements and reduced pollution for Oregon's Class I wilderness areas and national parks as well as the Columbia River Gorge National Scenic Area.

The plan calls for the installation of pollution controls for oxides of nitrogen (NOx) in 2011 and for sulfur dioxide in 2014. The controls are required by the federal Clean Air Act for "best available retrofit technology" or "BART" and would coincide with the installation of previously required controls to reduce mercury pollution.

A third stage requires the installation of additional NOx controls by 2018 to minimize Boardman's NOx emissions. DEQ's proposal would reduce plant emissions from the Boardman power plant by about 21,000 tons/year. This represents a 66 percent reduction in Boardman's emissions by 2014 and an 80 percent reduction in emissions by 2018.

The commission's consideration of this rule package was initially scheduled for April 2009, but was delayed to allow DEQ staff to thoroughly evaluate over 1200 public comments and develop a recommendation for the commission.

Funds awarded in Louisiana for household hazardous waste collection

The Louisiana Department of Environmental Quality recently awarded $251,894 in Beneficial Environmental Projects funds to seven different entities for household hazardous material collections and the removal of school lab waste.

DEQ, in conjunction with the Louisiana Municipal Association and Police Jury Association of Louisiana, solicited proposals from parish governments, municipalities, school boards, military bases and partnerships. The materials that are targeted are household hazardous materials and school lab wastes. The proposals were evaluated based on project goals, environmental implementation plan, safety plan, partners and sustainability. A 25 percent in-kind or cash match is required for each successful project.

The projects selected this year are: Shreveport Green, $34,475 to establish a HHM collection program for DeSoto Parish and removal of school lab waste in DeSoto and Webster parishes; Lincoln Parish Police Jury, $40,100 for establishment of a permanent HHM collection facility and removal of school lab waste in Lincoln and Union parishes; Lafourche Parish Government, $28,726 for a one-day collection of HHM from Lafourche Parish; Capital Area Corporate Recycling, Baton Rouge, $16,000 to expand electronic waste collections to eight additional events; Keep Ouachita Beautiful, $52,593 for a one time HHM collection and removal of school lab waste; Jefferson Parish Department of Environmental Affairs, $38,000 to expand existing HHM program to include mercury, fluorescent bulbs, pesticides and organic materials; and Keep CENLA Beautiful, $42,000 to establish HHM collection for Grant Parish and remove school lab waste in LaSalle and Grant parishes.

The successful projects enter into a cooperative agreement with DEQ and reports on the progress of the projects are due quarterly. Payments are made based on the milestones accomplished and reported in those reports.

Smurfit-Stone Container relocates Chicago corporate office

Smurfit-Stone Container Corporation announced its plans to relocate its Chicago corporate office from its current location at 150 N. Michigan Avenue to 222 N. LaSalle Street in Chicago. The move will be effective mid-August. The main switchboard number – (312) 346-6600 – will remain unchanged.

AUTO

SEMA wins protection for collectors and parts

Amendments lessen negative impact of vehicle scrappage program

The Specialty Equipment Market Association (SEMA) persuaded Congress to place a 25-year limit on trade-in cars and expand recycling opportunities under 'cash for clunkers' legislation. Under the controversial bill, consumers will receive a voucher to help buy a new car in exchange for scrapping a less fuel-efficient vehicle.

SEMA was able to mitigate the program's effects by convincing lawmakers to include a requirement that the trade-in vehicle be a model year 1984 or newer vehicle. The provision helps safeguard older vehicles that may possess 'historic or aesthetic value' and are irreplaceable to hobbyists as a source of restoration parts. The measure also allows all parts to be recycled except the engine. Lawmakers were convinced to permit the drive train to be recycled if the transmission, drive shaft or rear end are sold as separate parts.

Proponents claim that the so-called "Consumer Assistance to Recycle and Save Act" (CARS) may spur an estimated 625,000 vehicle sales. The program will last for one year.

"SEMA has consistently supported efforts to spur new car sales, but is disappointed that Congress ignored evidence that vehicle scrappage programs will not achieve claimed environmental benefits," said Chris Kersting, SEMA's president and CEO. "However, we are pleased that lawmakers agreed to spare from the crusher older cars and parts that help drive the restoration aftermarket and the passions of many in the automotive hobbyist community."

Under the program, consumers who agree to scrap a trade-in car that gets 18 miles per gallon (mpg) or less (15 mpg or less for heavy pick-ups and vans) will receive a voucher to buy a qualifying new car. The voucher will range from $3,500 to $4,500 based on the new car's fuel efficiency. The program primarily targets SUVs and pickups since most passenger cars manufactured during the last 25 years get more than the 18 mpg combined city/highway requirement. Vehicle mpg ratings are listed at www.fueleconomy.gov.

Under the $4 billion program, the car buyer will receive a $3,500 voucher if they buy a new passenger car that was rated at 4 mpg higher than the older vehicle, or a new pickup truck/SUV that was at least 2 mpg higher than the old truck. They will receive $4,500 if the passenger car was at least 10 mpg higher and the truck/SUV was at least 5 mpg higher.

Informational Facts:

Consumers may trade in their older vehicles and receive vouchers worth up to $4,500 toward the purchase or qualified lease of a new, more fuel-efficient car or truck. The mpg values are EPA combined city/highway fuel economy as posted on the window sticker. MPG ratings are listed at www.fueleconomy.gov

Trade-in Vehicles Must:

•Be in drivable condition.

•Be continuously insured and registered to the same owner for at least one year.

•Have a combined city/highway fuel economy value of 18 mpg or less.

•Have been manufactured in model year 1984 or later.

•Work trucks must be model year 2001 or earlier regardless of mpg.

New Vehicles:

•Must have a manufacturer's suggested retail price of less than $45,000.

Passenger Cars:

The trade-in vehicle must get 18 mpg or less. New passenger cars with mileage of at least 22 mpg are eligible for vouchers.

If the mileage of the new car is at least 4 mpg higher than the old vehicle, the voucher will be worth $3,500. If the mileage of the new car is at least 10 mpg higher than the old vehicle, the voucher will be worth $4,500.

Small Trucks and SUVs:

The old vehicle must get 18 mpg or less. New small trucks or SUVs (weighing up to 6,000 pounds) with mileage of at least 18 mpg are eligible for vouchers. If the mileage of the new truck or SUV is at least 2 mpg higher than the old vehicle, the voucher will be worth $3,500.

If the mileage of the new truck or SUV is at least 5 mpg higher than the old vehicle, the voucher will be worth $4,500.

Large Light-Duty Trucks:

The old vehicle must get 18 mpg or less. New large trucks (pick-ups and vans weighing between 6,000 and 8,500 pounds) with mileage of at least 15 mpg are eligible for vouchers.

If the mileage of the new truck is at least 1 mpg higher than the old truck, the voucher will be worth $3,500. If the mileage of the new truck is at least 2 mpg higher than the old truck, the voucher will be worth $4,500.

Work Trucks:

Consumers can trade in a pre-2002 work truck (defined as a pick-up truck or cargo van weighing from 8,500-10,000 pounds) and receive a voucher worth $3,500 for a new work truck in the same or smaller weight class.

Only 7.5 percent of the total funds can be used for vouchers for the purchase or lease of a work truck.

Oregon DEQ issues penalty to Insurance Auto Auctions

The Oregon Department of Environmental Quality (DEQ) issued a $4,928 penalty to Insurance Auto Auctions, Inc. for violating the water quality permit for their facility located at 4415 NE 158th Ave. in Portland, Oregon.

DEQ issued the penalty because Insurance Auto Auctions failed to collect all of the grab samples required during the 2007/2008 monitoring year to ensure that their storm water discharges met the water quality benchmarks of their National Pollutant Discharge Elimination System 1200-COLS general permit.

A grab sample is a single sample collected at a particular time and place which represents the composition of the storm water runoff from the facility into the Columbia River. Grab sample monitoring may reveal the presence of harmful levels of industrial pollutants that could enter public streams and rivers.

Appeal procedures allow Insurance Auto Auctions 20 days to appeal or pay the penalty.

The science of business

A grocer put up a sign that read "Eggplants, 25¢ each — three for a dollar."

All day long, customers came in exclaiming: "Don't be ridiculous! I should get four for a dollar!"

Meekly the grocer capitulated and packaged four eggplants. The tailor next door had been watching these antics and finally asked the grocer, "Aren't you going to fix the mistake on your sign?"

"What mistake?" the grocer asked. "Before I put up that sign no one ever bought more than one eggplant."

ON TOPIC —— Q&A

by Irwin Rapoport

Biofuels from non-food biomass

Currently there are three facilities producing methanol in the United States – two that use natural gas as a feedstock and one that uses coal. Range Fuels' new facility will be the first to produce biofuels from non-food biomass, including wood and wood waste from nearby timber harvesting operations.

David Aldous, Range Fuels' CEO, recently spoke with American Recycler about the new plant it is building, technological developments and the future of the market for methanol, ethanol and biofuels in general.

Is there a sufficient amount of wood and green waste in the United States to provide a secure long-term feedstock to cellulosic biofuels producers?

Aldous: In a 2005 joint report the United States Department of Agriculture (USDA) and Department of Energy (DOE) identified more than one billion tons of biomass in the United States that could be converted annually to cellulosic biofuels, like cellulosic ethanol and methanol. A more recent study conducted by Sandia National Laboratories and General Motors found that plant and forestry waste and dedicated energy crops could sustainably replace nearly a third of gasoline use by 2030.

How important was the participation of the DOE in funding the Range's cellulosic biofuels plant near Soperton, Georgia? Will further DOE funding be required to build future production facilities?

Aldous: Funding for Range Fuels' first commercial cellulosic biofuels plant will come from both private and public sources, including over $100 million from an oversubscribed Series B round of private financing completed in early April 2008, an $80 million loan guarantee through a United States Department of Agriculture program, $76 million through a United States Department of Energy grant, and support from the State of Georgia.

How will using renewable biomass reduce the carbon footprint of cellulosic biofuels production, such as cellulosic ethanol and methanol?

Aldous: Production of cellulosic biofuels based on using renewable supplies of non-food biomass will significantly reduce emissions of greenhouse gases since the biomass feedstock for the production of cellulosic biofuels is carbon neutral. Studies completed by Argonne National Laboratory and the Gallagher Review have shown that cellulosic biofuels or fuels produced from renewable sources like biomass reduce emissions of greenhouse gases by over 80 percent compared with gasoline.

What are the target markets for low carbon biofuels, such as cellulosic ethanol and methanol? Do you foresee that cellulosic biofuels use will be limited to certain sectors in the short term?

Aldous: There are a number of markets for ethanol and methanol produced from non-food biomass. Both cellulosic ethanol and methanol can be used as a transportation fuel blend component in motor vehicles, and cellulosic methanol can also be used as a combustion fuel in generating clean, renewable power, an ingredient in biodiesel production, and a feedstock in chemical manufacturing.

The market for ethanol in the United States is already established and significant – 70 percent of the gasoline sold in the United States contains some amount of ethanol, which contributed to over 9 billion gallons of ethanol being used to help fuel motor vehicles in 2009. Longer term, the use of cellulosic biofuels in the transportation sector has the potential to grow to 36 billion gallons per year by 2022 as a result of the Renewable Fuel Standard (RFS) established in 2007. The RFS calls for increasing use of renewable fuels, such as cellulosic ethanol and methanol, in transportation fuels, reaching 36 billion gallons per year by 2022 with 16 billion gallons of this from cellulosic biofuels.

How quickly is the science advancing to maximize cellulosic biofuels production?

Aldous: Range Fuels plans to have the first phase of its commercial-scale cellulosic biofuels plant operating by the second quarter 2010. The plant in Georgia will be the first plant in the United States to produce commercial quantities of cellulosic biofuels. The company has plans to construct additional facilities, and other companies have plans to construct and operate commercial cellulosic biofuels plants in the near term.

Are there certain regions where cellulosic biofuels production should be centered or do you anticipate regional production plants across the country?

Aldous: Cellulosic biofuels plants that use non-food biomass as their feedstock will likely be located in regions of the United States where there are significant renewable and sustainable supplies of non-food biomass that can be supplied at reasonable costs. It's also realistic to think these plants will be located in areas where demand for the same feedstock is limited, which will help maintain reasonable delivered feedstock costs.

The Midwest could provide meaningful supplies of agricultural wastes like corn stover and cobs, and the South and Southeast, for example, produce significant and sustainable supplies of wood and wood waste.

Additionally, these and other regions have the potential to support the sustainable production of high-yield and low impact biomass feedstocks that could also serve as feedstocks for future cellulosic biofuels plants.

How will using renewable biomass reduce the carbon footprint of cellulosic biofuels production, such as cellulosic ethanol and methanol?

Aldous: Production of cellulosic biofuels based on using renewable supplies of non-food biomass will significantly reduce emissions of greenhouse gases since the biomass feedstock for the production of cellulosic biofuels is carbon neutral. Studies completed by Argonne National Laboratory and the Gallagher Review have shown that cellulosic biofuels or fuels produced from renewable sources like biomass reduce emissions of greenhouse gases by over 80 percent compared with gasoline. Our carbon life cycle analysis using standard models and including the positive impact of our generation of clean renewable power shows our project will have a negative carbon footprint, or in other words we will have a greater than a 100 percent reduction in greenhouse gases compared to fossil fuels gasoline.

RUBBER

New tire innovation pays dividends to waste haulers

Goodyear's G289 WHA is a tire for waste haul applications that can be selected with DuraSeal Technology.

Goodyear introduced DuraSeal Technology, which brought the words "puncture sealant" [tire] to the attention of fleet managers around the country.

"We understood a sealant's potential benefits – longer tire life and more constant tire inflation pressures – and it kept the wheels of creativity spinning at Goodyear," said Donn Kramer, director of marketing for Goodyear commercial tire systems. "After years of research, we were able to create a gel-like, solvent-free compound and built it into the inner liner of the tire."

With that, Goodyear launched DuraSeal Technology that consistently and instantly seals punctures up to .25" in diameter in the repairable area of the tread. It does not seal sidewall punctures. When a nail puncture occurs, DuraSeal Technology's yellow, gel-like rubber compound instantly surrounds the nail and seals the tread puncture. Built into the crown of the tire, the sealant helps protect the part of the tire where punctures most often occur.

To keep total cost of ownership low, tires with DuraSeal Technology can be retreaded. "Because DuraSeal is in the inner liner, there is no impact on the retreading process," said Kramer. "This is a huge advantage for waste haulers using our G289 WHA with DuraSeal, because a retreaded tire can cost considerably less than a new tire. Multiplied by additional retreads on that casing, it really aids in driving down costs.

"Through DuraSeal, we also eliminate the costs associated with aftermarket sealants – the cost of initial application, the cost of cleaning out old sealant and reapplying new sealant, as well as the cost of disposal," continued Kramer. "Plus, there's no mess, wheel cleaning or need to find the right retreader. And, no downtime for most tire repairs.

DuraSeal Technology was first introduced on Goodyear's line of commercial mixed-service tires, many of which went into use in transfer dump and construction applications. This year, the expansion has continued to include the G289 WHA tire for front- and rear-loading waste haulers.

Goodyear conducted surveys, which revealed, among other things, that refuse fleets with 50 trucks typically had 102 tire-related service calls per month. It found that 69 percent of those calls can be attributed to tire punctures and each call cost the fleets an average of $170, or more than $143,000 per year. The survey demonstrated a need for a sealant tire among commercial users, such as waste haulers.

RUBBER

RMA sees drivers wasting gas due to low tire pressure

Tens of millions of United States motorists continue to ignore a simple step that can save money, save gas and save lives: checking tire pressure.

A project sponsored by the Rubber Manufacturers Association (RMA) found that about half of surveyed passenger vehicles had at least one under inflated tire. More alarming is that nearly one in five vehicles had at least one significantly under inflated tire that can compromise safety and waste gas.

RMA spearheaded its eighth annual National Tire Safety Week in June to help educate motorists about the importance of proper tire care. To drive home the point of Americans' lack of tire sense, RMA worked with several tire retailers to collect actual tire pressure measurements from more than 5,400 vehicles.

"Few actions that are so simple and quick to do have such striking benefits," said Charles A. Cannon, RMA president and CEO. "Taking five minutes every month to check tire pressure will put money in consumers' pockets, reduce national fuel consumption, help tires last longer and save lives."

Properly inflated tires can improve fuel efficiency by 3.3 percent and save $.06 a gallon at the pump, according to the United States Department of Energy. Approximately 1.2 billion gallons of fuel are wasted each year by motorists driving on under inflated tires.

The National Highway Traffic Safety Administration (NHTSA) estimates that under inflated tires contribute to more than 600 fatalities and 33,000 injuries each year.

Among the RMA tire pressure survey findings:

•Only nine percent of vehicles had four properly inflated tires.

•50 percent of vehicles had at least one under inflated tire.

•19 percent of vehicles had at least one tire under inflated by 8 pounds per square inch (psi).

•26 percent of vehicles had at least one tire under inflated by 6 psi.

•38 percent of vehicles had at least one tire under inflated by 4 psi.

Although all new vehicles are now equipped with tire pressure monitoring systems, these systems issue a low pressure warning only after tire pressure drops 25 percent below the vehicle manufacturer's recommended pressure. In many cases, an 8 psi loss of pressure would not trigger a warning light and would cause a loss of fuel economy and could lead to a vehicle safety issue.

In addition to the tire pressure survey, RMA commissioned a poll of registered drivers to gauge their knowledge of proper tire maintenance.

While a strong majority of drivers rate checking tire pressure as one of the top actions they can take to save fuel, 82 percent do not know how to properly check tires.

•44 percent of drivers wrongly believe that the correct inflation pressure is printed on the tire sidewall. Another 14 percent do not know where to find the correct pressure.

•20 percent of drivers wrongly believe that the best time to check their tires is when they are warm after being driven for at least a few miles.

•Nearly two out of three drivers do not know how to tell if their tires are bald.

To properly check tire pressure, motorists should check once each month; check tires when cold – before the vehicle is driven and; use the vehicle manufacturer's recommended pressure found on a label located on the driver's door or door post or check the owner's manual.

Magnum D'Or concludes agreement for scrap tire landfill

Magnum D'Or Resources, Inc., a rubber recycling solutions company, announced the startup, Phase 1, of their crumb rubber and nugget plant. This includes shredders, classifiers, control panels, handling equipment, and conveyors.

Also, Magnum's Magog Facility will complete the Phase 2 and 3 crumb rubber and rubber nugget production lines. Magnum's VP Michel Boux and production manager Carole Larose will supervise immediate equipment installation in order to be in full production as soon as possible.

The plant will be capable of producing rubber nuggets, crumb, granules and a powders division. Production is expected to be between 15,000 to 20,000 tons of rubber/year with the possibility of fine tuning operations to produce in excess of 25,000 tons annually.

CEO of Magnum, Joseph Glusic is in negotiations with Tire Recycling, Inc. of Hudson, Colorado. This facility will be Magnum's new USA facility. It is located on a parcel of approximately 120 acres of high grade commercially-zoned land. It consists of buildings, equipment and inventory in excess of 30,000,000 tires. The initial accelerated plan for the facility is to process, test, and produce various profitable rubber products.

"Peter!" his mother shouted, preparing to give him a big scolding. "There were two cookies in the pantry this morning but now there's only one! Do you have an explanation?"

Peter replied, "It must have been too dark for me to see the other one."

GLASS

GPI seeks entries for 2009 Clear Choice Awards

The Glass Packaging Institute (GPI) is kicking off the 20th year of the Clear Choice Awards, which recognizes the contribution glass packaging makes to the image, marketability, sustainability and success of food, beverage and cosmetic products. This year, GPI is shaking things up by holding a "virtual" Clear Choice Awards event. The 2009 Clear Choice Awards winners will be announced on the GPI website the week of September 21st, during GPI's Recycle Glass Week.

"Designing and packaging in glass ensures that your product has the competitive edge, as more and more consumers are demanding glass for its pure, recyclable, and premium characteristics," says Joseph Cattaneo, president of the Glass Packaging Institute.

To enter the 2009 Clear Choice Awards, participants should visit the GPI website and fill out an e-Call-for-Entries form. Industry judges will vote to crown winning products as the best glass packaging designs in North America. All 2009 Clear Choice Awards winners will also benefit from industry-wide recognition and brand building media coverage. All 2009 winning products will be displayed at the Worldwide Food Expo in Chicago and at The Showcase of Packaging Innovations at PACK EXPO Las Vegas 2009.

GPI will honor the top three package designs in each of the following categories: Alcoholic Beverage, Non-Alcoholic Beverage, and Food. GPI will also choose one package design to receive the Clear Choice Award for Overall Package Design, and honor eligible entries with GPI's Conversion Recognition.

Also with Recycle Glass Week, GPI will honor recipients for GPI's new "Friends of Glass" recognition, hold nationwide glass recycling-related activities and provide consumers with information and opportunities to hold their own recycling events. GPI's new "Friends of Glass" recognition will honor those companies, organizations, and/or persons that recycle glass or promote the recycling or recyclability of glass for the environment, and simultaneously help GPI in reaching its recycled content goals.

Since 1989, the Clear Choice Awards has honored consumer product goods manufacturers who expand the frontiers of glass packaging design by using glass containers in innovative ways. Sponsored by the Glass Packaging Institute, this is the only Awards program that recognizes the contribution glass packaging makes to the image and success of everyday products. From sparkling water to salsa, baby food to bottled fruit juices, beer to flavored rums, pasta sauce to pickles, the Clear Choice Awards are presented to products that triumph in glass.

METALS

Steel imports decline in April 2009

Based on preliminary Census Bureau data, the American Iron and Steel Institute (AISI) reported that the United States imported a total of 1,214,000 net tons (NT) of steel in April 2009, including 1,107,000 NT of finished steel (down 21 percent and 25 percent, respectively, vs. March final data). Total and finished steel imports on an annualized basis are down 37 percent and 28 percent, respectively, vs. 2008. Annualized total imports of steel in 2009 would be 20.1 million NT. Finished steel import market share was an estimated 25 percent in April and year-to-date (YTD) through four months is an estimated 30 percent.

Key products with increases in April 2009 compared to March include Heavy Structural Shapes (up 15 percent), Cold Rolled Sheets (up 9 percent) and Tin Plate (up 5 percent). For YTD 2009 vs. same period last year, OCTG imports (led by China) are up 50 percent.

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

	APR 2009	MAR 2009	APR 2008	2008 Annual	% Change 2009 Annual vs. 2008
CHINA	98	196	181	4,821	-37.6%
JAPAN	84	107	169	1,614	-18.5%
INDIA	79	83	82	1,102	-13.6%
SOUTH KOREA	71	135	211	2,305	-19.7%
GERMANY	49	55	146	1,122	-35.7%
TAIWAN	34	38	42	662	-16.3%
BRAZIL	31	45	41	436	22.5%
TURKEY	27	90	158	827	7.2%
All Others	634	723	1,198	13,067	-32.5%
TOTAL	1,107	1,472	2,228	25,956	-28.2%

In April, the largest volume of finished imports from offshore was from China (98,000 NT, down 50 percent from March).

The April tonnage from China was 9 percent of all finished imports and, based on YTD data, finished steel imports from China in 2009 would annualize at 3.0 million NT. Other major offshore suppliers in April were Japan (84,000 NT, down 21 percent from April), India (79,000, down 5 percent), and Korea (71,000 NT, down 48 percent). For YTD 2009 vs. same period last year, finished imports are up significantly for a number of countries – including China (up by 33 percent).

Steel import permit applications down in May

Based on the Commerce Department's most recent Steel Import Monitoring and Analysis (SIMA) data, the American Iron and Steel Institute (AISI) reported that steel import permit applications for the month of May totaled 1,015,000 net tons (NT). This was a 15 percent decrease from the 1,187,000 permit tons recorded in April 2009 and a 16 percent decrease from the April preliminary imports total of 1,214,000 NT. Import permit tonnage for finished steel in May was 999,000 NT, a decrease of 10 percent from the preliminary imports total of 1,107,000 NT in April and the lowest such monthly import figure since February 1993. May 2009 total and finished steel import permit tons would annualize at 18,543,000 NT and 17,310,000 NT, down 42 percent and 33 percent, respectively, from the 31,927,000 NT and 25,956,000 NT imported in 2008.

In May, the largest finished steel import permit applications for offshore countries were for China (153,000 NT, up 56 percent from April), South Korea (120,000 NT, up 70 percent), Japan (73,000 NT, down 13 percent), Taiwan (34,000 NT, no change) and India (27,000 NT, down 66 percent). Finished steel import market share in May is estimated at 21 percent.

Finished steel import products that registered increases in May vs. the April preliminary include Reinforcing Bar (up 54 percent), Oil Country Goods (up 37 percent) and Plates in Coils (up 19 percent). Year-to-date, imports of Oil Country Tubular Goods (OCTG) remain significantly higher (up 31 percent).

Novelis hits record aluminum can recycling

Aluminum company Novelis Inc. announced that it recycled an estimated 39 billion aluminum beverage cans in the past year, a new company record. Novelis is the world's largest producer of flat-rolled aluminum and the world's leading recycler of used beverage cans.

By recycling the used containers back into aluminum sheet for new cans, the company estimates it reduced its need for primary aluminum by more than 530,000 metric tons, saving approximately 73 million MBTUs of energy and avoiding the production of nearly 5 million metric tons of greenhouse gases (GHGs).

"The environmental benefit of aluminum recycling is enormous," said Nick Madden, vice president of global procurement and metal management for Novelis. "Not only does it reduce the need for the mining of natural resources, but it eliminates large amounts of emissions generated through primary production. The GHGs avoided through our can recycling program over the past year is the equivalent of taking more than 900,000 gasoline-powered automobiles off the road for 12 months."

Used beverage cans account for approximately half of all aluminum scrap processed by Novelis each year. Aluminum products from automobile parts to building materials can be recycled using just five percent of the energy required to produce the same amount of new aluminum from raw materials. Aluminum is one of the most recycled products on the planet.

An economist is a person who states the obvious in terms of the incomprehensible.

Appliance Recycling Centers enters joint venture

Appliance Recycling Centers of America, Inc. announced that through a joint venture with a Mexican corporation, Diagnostico y Administracion de Logistica Inversa SA de CV (DALI), it will provide refrigerator recycling services for more than 160 appliance retailers and manufacturers participating in a refrigerator replacement program sponsored by the Mexican government.

Through this energy efficiency program, the government offers residents of Mexico low-interest financing and a cash rebate of up to 50 percent of the cost of a new, energy efficient refrigerator when an old, operating refrigerator is turned in for recycling. Major new-appliance retailers, including Wal-Mart and Sears, deliver the new appliance to the customer and collect the old unit for recycling.

DALI operates more than 35 facilities throughout Mexico to process the old refrigerators to remove and properly manage all environmentally harmful substances, including CFC refrigerants and oil, and recycle metals, plastics and glass. The company expects to open additional recycling centers to meet the demands of the program, which has been funded to permanently remove approximately 400,000 working refrigerators from service.

Ford's annual sustainability report details progress

Ford's 2008/2009 reported entitled "Blueprint for Sustainability: Our Future Works" updates the company's progress in key areas of climate change, fuel economy, mobility, vehicle safety and human rights. Significant progress highlighted by Ford in its 10th annual report for 2008/2009 includes:

•Company remains on track to reach its goal to reduce by 30 percent the carbon dioxide (CO_2) emissions of its new United States and European vehicles by 2020, compared to the 2006 model year.

•Accelerated development of battery electric vehicles (BEV) and plug-in hybrids (PHEVs), which will be introduced between 2010 and 2012.

•Introduction of the Ford Fiesta ECOnetic with the lowest CO_2 emissions of any family car sold in Europe at 98g/km

•Launch of two new hybrids in North America: Ford Fusion Hybrid and Mercury Milan Hybrid, the most fuel-efficient midsize sedans in North America at 41 miles per gallon in city driving.

•Introduction of EcoBoost™ engine technology which uses direct injection and turbo charging to deliver up to 20 percent better fuel economy, up to 15 percent fewer CO_2 emissions and superior driving performance compared to larger-displacement engines.

METALS

DEQ issues penalty to Star Bright Plating for waste violations

The Oregon Department of Environmental Quality (DEQ) has issued a $77,744 penalty to Star Bright Plating Inc., a former chrome plating business in Mulino, for operating as a hazardous waste treatment site without a permit.

DEQ learned of numerous hazardous waste violations at the facility during a December 2007 inspection of the site at 24225 South Highway 213. DEQ specifically observed that the company was using applied heat to evaporate chrome plating process wastewater, which is a hazardous waste, without first obtaining a hazardous waste treatment permit. Evaporation of such wastewater released lead and chromium into the air and posed a potential health threat. DEQ learned that the company had been evaporating the process wastewater from approximately 2005 through 2007.

In calculating the penalty, DEQ noted that the company saved $68,144 by processing the waste on site instead of properly disposing of it off site as hazardous waste. DEQ also noted the company's efforts to close a storage tank to prevent further illegal treatment of the process water and efforts to correct other hazardous waste management violations that it discovered during the December 2007 inspection.

Prior to February 2008, Star Bright Plating incorrectly reported to DEQ that it was a conditionally exempt generator of hazardous waste for the years 2005, 2006 and 2007. (Conditionally exempt generators generate less than 200 pounds of hazardous waste on a monthly basis.) In February 2008, the company amended this report, noting that it was in fact operating as a small-quantity generator of hazardous waste, due to the generation of between 200 and 2,200 pounds of hazardous waste monthly. DEQ decided not to assess a civil penalty to the company for failing to accurately report its hazardous waste generation activity, but noted the violation in its records.

Star Bright Plating ceased plating operations at the Mulino facility in November 2008, according to the company's representative, Victor van der Star, who has been in contact with DEQ.

Gerdau Ameristeel suspends production in New Jersey

Gerdau Ameristeel Corporation is suspending production at its Sayreville, New Jersey steel mill and closing its rolling mill in neighboring Perth Amboy, New Jersey due to lower demand for its products resulting from the downturn in the economy. The company said these actions are expected to occur gradually over the next several months. The company indicated that it would restart operations at the Sayreville facility when business conditions warrant.

The company is also entering into discussions with the United Steel Workers regarding the potential closure of the Company's steel mill located in Sand Springs, Oklahoma.

The Sayreville facility will continue to carry a full range of products in inventory available for shipment or customer pickup until production resumes.

Mario Longhi, president and CEO of Gerdau Ameristeel commented, "This was a very difficult decision that came after careful analysis and review of the marketplace, our production capabilities, and the most cost effective alternatives to meet the current and future needs of our customers throughout North America during this unprecedented economic downturn. These actions follow a series of steps the company has taken over the last nine months to reduce its costs."

In connection with these actions, depending on the outcome of the Sand Springs discussions, the Company expects to incur an after tax charge from approximately $80 million to $140 million related to these closures. Of these amounts, between approximately $15 million to $30 million are expected to be cash costs for severance and facility closure expenses. Depending on the outcome of the Sand Springs discussions, the company expects to realize annualized pre-tax cash savings of approximately $35 million to $70 million as a result of these actions. In accordance with US GAAP requirements, the company anticipates some of these charges to be included in the three month period ended June 30, 2009 and some to be included in the three month period ended September 30, 2009.

Office building built from shipping containers

The City of Providence, Rhode Island celebrated its newest development project; a creative green office building on Harris Avenue on the west side of Providence that will be one of the City's most distinctive contemporary structures.

This innovative commercial building – The Box Office – will be constructed from 32 recycled steel shipping containers painted in bright hues. The developer is Brown and Peter Gill Case, principal of Truth Box, a Providence-based design/development firm, which specializes in sustainable building practices. The 3-story building will contain 12 units of office and studio spaces, of which thirty-seven percent are pre-leased. The building's design, environmental philosophy and inexpensive small units are attracting innovative small businesses, artists, and young start-ups working in Providence's growing creative economy. Completion of the project is anticipated in March 2010.

There are thousands of empty shipping containers piling up in ports because of our nation's ongoing trade deficit," stated Case. "Containers offer a timely opportunity to promote green building principals and offer high quality design in an economy that demands affordable options. I have been inspired by the innovation of other container projects such as 'Container City' in London, 'Keetowen Tempo Housing' in Amsterdam and 'Puma City' (which recently had a 'stop over' at the Fan Pier in Boston)."

The Box Office is the first in a series of three highly-visible small-scale green buildings planned for Providence in the next five years, said Case.

March steel shipments down

The American Iron and Steel Institute (AISI) reported that for the month of March 2009, United States steel mills shipped 4,138,000 net tons, a 54.8 percent decrease from the 9,158,000 net tons shipped in March 2008 and a 4.2 percent decrease from the 4,320,000 net tons shipped in the previous month, February 2009.

A year-to-year comparison of year-to-date shipments shows the following changes within major market classifications: service centers and distributors, down 54.9 percent; automotive, down 55.2 percent; construction and contractors' products, down 56.0 percent; and oil and gas, down 48.4 percent.

Scrap Metals MarketWatch

Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
#1 Bushelings	per gross ton	$150.00	$170.00	$178.00	$189.00	$250.00
#1 Bundles	per gross ton	150.00	170.00	173.00	188.00	222.00
Plate and Structural	per gross ton	200.00	155.00	165.00	172.00	208.00
#1 & 2 Mixed Steel	per gross ton	195.00	148.00	160.00	168.00	200.00
Shredder Bundles (tin)	per gross ton	160.00	150.00	142.00	144.00	153.00
Crushed Auto Bodies	per gross ton	160.00	150.00	140.00	150.00	153.00
Steel Turnings	per pound	60.00	50.00	90.00	100.00	110.00
#1 Copper	per pound	2.12	2.14	2.12	2.19	2.18
#2 Copper	per pound	2.05	2.06	2.04	2.10	2.10
Aluminum Cans	per pound	.38	.48	.48	.48	.48
Auto Radiators	per pound	1.30	1.13	1.45	1.48	1.47
Aluminum Core Radiators	per pound	.40	.41	.50	.47	.39
Heater Cores	per pound	.95	.98	1.20	1.15	1.20
Stainless Steel	per pound	.50	.58	.50	.57	.59

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

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INTERNATIONAL

Curbside or co-mingled collections: quality should always come first

Sorting household recycling at the curbside is the best and cheapest option in most cases, according to UK's Waste & Resources Action Programme (WRAP).

WRAP is publishing its view on the various ways of collecting household recycling drawing on the latest research. Local authorities are best placed to determine which collection method is most suitable. WRAP recognizes that physical conditions like high rise housing or highly congested roads may prevent sorting at curbside being the best choice in some circumstances.

However, where local authorities have the choice, and curbside collections are not an option, two stream collections which keep paper and card separate from other materials, especially glass, are preferable. This is because they produce the best material for recycling by keeping contamination levels down.

Fully co-mingled (mixed) collections have cost and quality disadvantages which should limit their use except where other options are not suitable.

WRAP is presenting its views, drawing on work it has done over the last three years, and the latest research in a leaflet 'Choosing the Right Recycling Collection System' at the FutuResource conference in London. This is in the light of the growing debate on the merits of various collection systems.

WRAP acknowledges that local authorities are best placed to judge the circumstances in their areas and make the choice of collection system, and WRAP's views are intended to help them in considering options.

Among the conclusions is that sorting recycling at the curbside provides the best quality material and, when total costs are taken into account, is cheaper for council taxpayers. This flies in the face of the popular belief that co-mingled recycling collections are cheaper.

WRAP argues the evidence is clear that the quality of the materials recovered for recycling is affected by the way they are collected. Quality is important because it affects the uses the material can be put to. Quality materials can be easily reused in ways which give the most benefit to the environment. Curbside sorted materials are consistently good quality with less than one percent being rejected. Co-mingled collections are subject to higher contamination rates and have higher levels of rejection.

Reprocessors of recycled materials in the UK are currently struggling to find enough good quality material for their needs from UK sources despite the volumes being exported. As a result they are importing some material.

Although curbside sorted materials have the best quality and are likely to go to the most beneficial uses, consumers can still be confident that the great majority of co-mingled materials are recycled in some form and are not sent to landfill.

Can recycling in Western Europe increases

The overall recycling rate for aluminum beverage cans in Western Europe improved in 2007 and stands now at 61.8 percent, an increase of 10 percent compared to the year 2005. This 10 percent increase represents an impressive saving of 300,000 tons of greenhouse gas equivalents.

The total number of aluminum beverage cans consumed in Europe rose from 28.3 (2006) to 32.0 billion units in 2007, resulting in an overall aluminum share of nearly 70 percent in Europe. In Western-Europe consumers use on average 40 aluminum cans per capita. The consumption of aluminum cans in Central and Eastern Europe grew by 2.5 billion units to a total number 12.5 billion cans, an increase of 25 percent compared to the year 2006.

The aluminum beverage can market grew in particular in Northern and Eastern-Europe, while several Western-European countries such as France, Spain, Greece and Germany demonstrated solid growth rates. The total market including Central and Eastern Europe grew by 14 percent to more than 37 billion aluminum cans produced. This also includes exports to non-European countries.

While the Northern-European deposit schemes maintained or even increased their high recycling levels, countries with mixed waste and separate metal packaging waste collection schemes further improved as well due to better collection and innovative sorting and recycling techniques.

Countries such as the Netherlands, which rely heavily on the incineration of unsorted household waste, have invested in aluminum collection from bottom ashes and booked considerable progress.

The European Aluminium Association (EAA) strongly recommends authorities and waste management operators to invest more in the latest available sorting and recycling technologies as pay-back times are relatively short given the high scrap value of well sorted aluminum, even in difficult economic times.

EAA is confident that due to the high scrap value of aluminum, and the environmental advantages of recycling. A can made of recycled aluminum saves up to 95 percent energy compared with cans entirely made of primary aluminum.

End-of-life recycling of used aluminum beverage cans back into new cans or other highly valuable aluminum products, such as bicycles, window frames or engine blocks, helps can makers and beverage producers to lower their carbon footprint.

Anaerobic digestion demonstrations gain approval

British environment secretary Hilary Benn announced the five successful projects to receive government grants to create energy from organic waste, such as food.

The grants are being awarded under the Defra Anaerobic Digestion Demonstration Programme, and form part of wider plans to tackle food waste and packaging.

Anaerobic digestion breaks down organic matter, such as animal manure and food waste to produce biogas, a renewable energy source for heat, power and transport and keeps organic waste out of landfill, which cuts greenhouse gas emissions.

The five projects have been chosen as they will demonstrate cutting-edge technology and will be able to show the benefits of anaerobic digestion to a range of industries.

Benn said, "We need to rethink the way we deal with waste – we must see it as a resource, not a problem. In the UK we produce 100 million tons of food and other organic waste every year that we could be using to create enough heat and energy to run over two million homes – that's five Birminghams.

"These first five projects will show other British businesses the benefits and possibilities of anaerobic digestion and help us become world leaders in this exciting new technology."

The successful applicants for funding from the Anaerobic Digestion Demonstration Programme are:

- Biocycle South Shropshire;
- Blackmore Vale Dairies;
- GWE Biogas Ltd;
- Staples Vegetables; and
- United Utilities and National Grid.

The five projects, to be built between now and the end of March 2011, are being funded by the Anaerobic Digestion Demonstration Programme, administered by the Waste and Resources Action Programme.

Recycling rate in Scotland continues upward trend

Scottish Environment Protection Agency (SEPA) released figures that show that Scotland's annual recycling and composting rate rose to 33.5 percent for the year January to December 2008, exceeding the Scottish Government's target of 30 percent for 2008. The next target is 40 percent by the end of 2010.

A total of 1.29 million tons of biodegradable municipal waste was sent to landfill in Scotland in 2008. This is already below the 1.32 million tons limit set for Scotland by the European Commission.

Progress is also being made towards meeting the Scottish Government's target of stopping the growth of municipal solid waste by the end of 2010.

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ALTERNATIVE ENERGY

Hydraulic hybrids tested in NYC refuse trucks

Field tests of Bosch Rexroth's Hydrostatic Regenerative Braking (HRB) parallel hydraulic hybrid system were launched by the New York City Department of Sanitation (DSNY), to assess HRB's viability for use as an alternative drive system for the department's refuse trucks. The field evaluations are designed to authenticate both the technical and economic benefits of the HRB system, and provide real-world operating data DSNY will use to consider large-scale deployment of the technology within the city's in-service and new vehicle fleets.

Sponsored by the New York State Energy Research and Development Authority, this evaluation project identifies vehicle fleets which, when integrating technologies such as HRB, have high potential for reducing fuel consumption and emissions. The hydraulic hybrid evaluation is part of a larger program carried out by DSNY that will demonstrate the impact of utilizing multiple alternative drive technologies.

The HRB system-equipped trucks will be operated in all five of the City's boroughs, to test fuel efficiency and other parameters in a wide range of neighborhoods, seasonal conditions, and operating environments.

"The HRB system provides optimum fuel efficiency when vehicles undergo frequent braking and acceleration," said Michelle DuHadway, manager, Parallel HRB accounts, Bosch Rexroth. The trucks will be subjected to a variety of in-use testing, including braking tests, acceleration tests, route collection tests and dynamometer testing to evaluate emissions.

"New York City Department of Sanitation is thrilled to be the first refuse fleet in the nation to field test the Bosch Rexroth HRB system. This is an important step toward achieving the commercialization of heavy-duty hybrid hydraulic vehicles," said Rocco DiRico, deputy commissioner, support services, DSNY.

The HRB system is installed onto a Crane Carrier Company LET2 truck, and will be integrated with a Heil Environmental refuse body. Two identical trucks equipped with a HRB system will be provided for the evaluation.

The Rexroth HRB system uses a hydraulic pump/motor, connected to the driveline, to capture kinetic energy during vehicle braking. When braking, the pump/motor acts as a pump, absorbs energy from the driveline and imparts a retarding force on the drivewheels, pumping hydraulic fluid into a nitrogen-pressurized accumulator. During acceleration, the pressurized gas pushes fluid out of the accumulator, and the pump/motor then acts as a hydraulic motor, assisting the engine and reducing the fuel required to launch the vehicle. This process is commonly referred to as regenerative braking.

Hybrid drive train technologies will become a "necessity" in the near future in the heavy truck market, said Glenn Pochocki, vice president of sales & marketing, refuse/chassis products, Crane Carrier Company. "Bosch Rexroth's hybrid HRB technology and system can be integrated into most medium and heavy duty truck vocations without impacting the vehicle's configuration," he said. "The HRB system is designed to improve the vehicle's fuel economy, while improving brake system life with improved acceleration – what better combination is there?"

According to Bosch Rexroth, the HRB technology has already undergone field testing in urban settings, with positive results. "We started our in-field testing of HRB last summer with a refuse customer in Berlin, Germany and are now introducing this proven technology in North America," said Ed Greif, vice president, engineering development hydraulics, Bosch Rexroth. "Field testing has verified our simulations and we anticipate similar success in the United States."

Hydraulic hybrids, due to their high power density, are well equipped to cope with the high power requirements of regenerative braking. Maintaining efficiency during energy conversion, hydraulic hybrid systems have the potential to capture a large portion of braking energy and make use of it more effectively.

Reduced brake maintenance costs and the associated vehicle downtime offer another significant system savings. Since it is possible to slow the vehicle without engaging the foundation brakes as often, the life of the vehicle's brakes is extended and the amount of brake dust released into the environment is reduced.

"On average, the Department of Sanitation replaces brakes approximately once a year, which takes the truck out of service for at least two days. We hope to improve that figure by 50 percent or more," DuHadway said.

Genomatica produces BDO from sugars

Genomatica, a sustainable chemicals company, announced that the company's engineering team has achieved an important milestone toward the production of commercial grade 1,4-butanediol (BDO) from renewable feedstocks using Genomatica's bioprocess. BDO is a substance used to manufacture certain plastics, fibers and polyurethanes.

The company has demonstrated that it can process BDO produced from sugar to greater than 99 percent purity using a proprietary recovery process. The achievement clears the way for development of a demonstration facility to begin operating next year.

The new process begins with producing BDO in fermentation broths generated by microbes engineered to directly produce BDO from sugars, and uses process designs and equipment compatible with large-scale chemical production. The purification achievement proves the feasibility of critical downstream process engineering elements of Genomatica's manufacturing method for renewable BDO. Fully integrated, the process will offer a competitive advantage relative to producers that today generate BDO entirely from fossil fuels.

"The first 100-percent renewably sourced and purified BDO – it's a powerful sight that symbolizes the transformation that is possible for our industry," said Christophe Schilling, chief executive officer of Genomatica. "With a cost advantage over traditional manufacturing processes, our bio-manufacturing method for BDO will release chemical producers from the fluctuations of the hydrocarbon markets and lower their overall carbon footprint, while meeting the growing demand for sustainably manufactured products."

When Genomatica began development of this bio-manufacturing process, the company set three key laboratory-scale development milestones to commercialize the process: first, to show that its organisms can directly produce BDO in a fermentation broth from sugars; next, to show that the yield and rate of BDO production and concentration can reach levels consistent with commercial goals; and finally, to show that BDO can be purified from the fermentation broth using a cost-effective and scalable process. Since the successful production of BDO was first announced last September, the company has been consistently executing against all three milestones.

Genomatica first produced BDO from glucose in February 2008, and has since demonstrated the ability to produce BDO at high levels from sucrose as well as from xylose, a five-carbon sugar. Development is primarily focused on sucrose because it is a readily available feedstock with a tradable forward market and with less pricing volatility compared to hydrocarbon feedstocks currently in use to make BDO. The ability to produce BDO from both six and five-carbon sugars now opens the way to possible second-generation BDO processes that use carbohydrates derived from lignocellulosic biomass, such as wood residue, municipal paper waste, agricultural waste or energy crops like switchgrass.

At the same time, company researchers have demonstrated 20,000-fold increases in the concentrations of BDO that microbes can produce, approaching the commercial levels needed to manufacture large volumes of BDO at reduced cost. Concurrently, the company created strains of the bacteria that are tolerant of the commercial target concentrations.

The company has shown the ability to produce purified BDO from various sugars, validating the feasibility of all of the major unit operations in the lab, and setting the stage for a demonstration plant facility. The company will focus on scaling up to begin operations at a demonstration plant in 2010.

The generation of purified BDO will allow Genomatica's bio-manufacturing process to compete against petroleum-based equivalents and offer a cost advantage to producers. Many chemical producers are facing unprecedented business challenges as the global economic slowdown depresses demand, and the credit crisis hampers their ability to finance large-scale projects.

Fluctuating natural gas prices and possible changes in environmental and climate regulation have added to the uncertainty for petrochemical producers.

ALTERNATIVE ENERGY

Waste Management now offers solar-powered trash compactors

Waste Management has entered into an agreement with BigBelly Solar under which Waste Management will provide WM Solar Powered Trash Compactors to its customers including municipalities and high-traffic facilities.

Under the agreement, Waste Management has become the exclusive waste and environmental services company distributor of BigBelly solar compactor technology in North America.

"We know busy intersections, public parks, city streets, sporting events and other public spaces can be magnets for trash," said Dave Aardsma, senior vice president of sales and marketing for Waste Management. "Ordinary trash barrels can easily overflow and become eyesores. The Waste Management solar powered trash compactor can provide a number of solutions in those uses, by reducing waste collection frequency, lowering costs for our customers and ensuring a greener, cleaner environment."

WM Solar Powered Trash Compactors are completely self-powered, using built-in solar panels to compact trash. About the same size as a standard 35-gallon trash barrel, each compactor provides five times the capacity of a traditional trash receptacle. When the unit reaches capacity, sensors trigger an internal compactor that flattens the contents, converting 180 gallons of waste into easy-to-collect bags. A wireless system then signals that the unit is ready to be picked up. This cuts the need for trash pickup by up to 80 percent, which reduces collection costs, fuel use and greenhouse gas emissions. The compactors also include receptacles for collecting plastic bottles, newspapers, glass and other recyclables.

Waste Management will initially target municipal governments and high-traffic facilities interested in reducing the need for trash collection and keeping public spaces clean and litter free. "Consumers report that convenience and accessibility of public trash and recycling receptacles are a major influence in encouraging them to dispose of waste properly and to recycle more," said Matt McKenna, president and CEO of national nonprofit Keep America Beautiful, Inc.

Waste Management has also installed 15 units at Patriot Place, a 1.3-million-square-foot retail, dining and event destination adjacent to Gillette Stadium in Foxborough, Massachusetts. "Our WM Solar Powered Compactors are an important piece of Patriot Place's overall sustainability and recycling initiatives," said Brian Earley, general manager of Patriot Place. "In addition to promoting recycling and reducing our waste volume and energy consumption, we have realized significant operational efficiencies and cost savings for waste removal."

Salvaging Millions

by Ron Sturgeon
Autosalvageconsultant.com

"Dude, you might not be getting your Dell back": One traveler's story

"Listen, I left my new Dell 6400 at security earlier today. Did you find it?"

"We did recover a computer today. I can't release any more information without a serial number."

"What if I gave you my password, and you turned on the computer and logged in. Only the owner would know that, right?"

"I wish I could, but we need a serial number. That's how it works."

"But dude, Dells doesn't have serial numbers."

"That sounds like a personal problem to me, dude."

I recently visited San Diego and I happened to be unfortunate enough to have to go back through airport security three times so that they could check my carry ons. In the end, I forgot my brand new laptop at the security checkpoint.

I didn't realize it until I got home.

I frantically called the San Diego airport, and got a recording that said airport security was only open from 1 to 5 p.m. on weekdays and wouldn't be open the next day, which was a holiday.

What would it be like for you if you lost your laptop and all of its files? Read on for tips to assure you don't get wiped out like I nearly did.

First, make sure that your laptop has a large label on the top with your cell and office numbers and full mailing address. If my laptop had been marked, I am confident that within minutes of my leaving it in security, they would have paged me. (My old laptop was marked, but shame on me for not having marked the new one.) If yours isn't, do it now!

Second, make sure that you have a means to get at the information about your computer when you need it. In my case, I had recorded the information in MS Outlook under Dell and synched it with my iPhone for my old laptop. Make sure you put your serial number, service tag number, model number, ANYTHING that you might need in a safe place!

My lost laptop story gets even worse. It seems that Dell doesn't assign serial numbers to laptops; they assign a service tag number. I didn't have mine, so I did some work online to find my invoice and get the service tag number. I called back, and they said they couldn't use the service tag number. Security regulations required a serial number to be verified by a law enforcement officer. I explained that Dell laptops didn't have serial numbers, and asked her to kindly look at the computer to verify that it had none. NOPE. I thought I might never get my laptop back!

After a lot of hassle, common sense prevailed, and I did reach someone who would accept the service tag number, and he promptly called a law enforcement officer to release it to my friend after I faxed a notarized release. The bottom line is, save yourself the heartache by marking the property and making sure you record all the pertinent identifying information in a readily available place.

While you are marking your laptop, do the same for your cell phone. My iPhone has a case on it, though it is marked. When I left it in a restaurant recently, the person who found it didn't remove the cover to see the information. I was lucky. I called the number, and someone answered. When I got it back, (it was password protected), it showed 13 attempts to get in. Now, I've notched a hole in the rear cover and the label shows when the cover is on.

You may even wish to include the word "reward" on the contact label.

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.

Bio-oil created from rail ties

New Green Technologies, Inc. (NGRN), has entered a bid for a study to use its waste-to-energy gasification process for using waste wood ties to create energy and dispose of toxic railroad ties. NGRN has made a strategic partnership to use a base level of 250,000 (approximately 50,000,000 pounds/25,000 tons) railroad ties per year which could yield 3,000,000 gallons of bio-oil annually for a single 75 ton-per-day waste tie to energy plant. Previously, the NGRN technology had shown its ability to convert biomass into large volume bio-energy.

NGRN and Green Energy Solutions, Inc. (GES), had previously entered into a joint venture to establish a large scale project feasibility study for wood waste in Canada. GES, as part of the feasibility ramp up with NGRN has entered into a preliminary agreement for a base level of available wood railroad ties for conversion to bio-fuels and energy. Under the partnership, NGRN would use its Catalytic Activated Vacuum Distillation (CAVD) pyrolisis gasification process to show the commercial use of the system for the larger scale plants. The plant would also be able to create an approximate 120,000,000 standard cubic feet of gas annually. The GES and New Green proposal with the source of feedstocks, is under a bid to receive funding for the feasibility study for railroad ties. Use of the CAVD could solve serious environmental issues in disposal of railroad ties.

Scrap railroad ties are classified as hazardous waste, which is expensive to treat and dispose. The system has been proven out in numerous feedstocks, such as tires, carpet waste, and bio-waste, and was found to be emissions friendly. The project will encompass using modular CAVD technology in a large plant to reduce the volume of the stockpiled construction debris, and if necessary, NGRN's plasma system to convert any hazardous materials remaining in the concentrated waste to cleaner burning gas.

OriginOil files algae patent

OriginOil, Inc. a developer of a technology to transform algae, the most promising source of renewable oil, into a true competitor to petroleum, announced the recent filing of its Patent Cooperation Treaty, or PCT application, entitled "Apparatus and methods for photosynthetic growth of microorganisms in a photobioreactor." The invention addresses challenging problems in the culturing of microalgae, including high energy utilization, fouling of light emitting surfaces, and diurnal growth cycles. The proposed system provides efficient light utilization with comparatively low energy costs by providing light at closely spaced intervals within a photobioreactor so that light is provided throughout the photobioreactor rather than just at the surface and at the interfaces between culture medium and photobioreactor wall.

"This international filing consolidates our inventions in the area of algae production and oil extraction," said OriginOil's chief technology officer, Vikram Pattarkine, PhD.

The filing describes system and methods for enhancing mass production of microalgae, involving the use of light arrays configured to provide photosynthetically effective illumination from closely distributed lights spaced at strategic intervals to optimize contact between algae and light. Illumination and nutrient provision can be timed to disperse light and nutrients when the organism is in a receiving mode. A process flow system is also described, which can be scaled for the mass production of algae.

ELECTRONICS

Indiana becomes 19th state to mandate e-waste recycling

Indiana Governor Mitch Daniels passed a major electronics recycling law when he signed HB 1589 into law. This makes Indiana the nineteenth state to pass a law creating a statewide e-waste recycling program. Eighteen of these 19 states, including Indiana, have adopted "producer takeback" laws, requiring the manufacturers to pay for the collection and recycling of old products.

The Indiana law requires manufacturers of video display devices (TVs, monitors, and laptops) to collect and recycle 60 percent by weight of the volume of products they sold in the previous year in Indiana. After the first two years, manufacturers who fail to meet those goals will pay an additional recycling fee for every pound they fall short of their goal.

The program allows consumers, public schools and small businesses to recycle a larger group of products for free, including TVs, computers, laptops, keyboards, printers, fax machines, DVD players, and video cassette recorders. The program begins collection in April 2010.

The Indiana Recycling Coalition has championed producer responsibility in Indiana as a practical and effective way to reduce electronic waste. They presented this issue to the legislature's Environmental Quality Service Council in October 2008, and led support for the bill throughout the session.

E-waste recycling laws are under consideration in several states, including Massachusetts, New York, Wisconsin, South Carolina, Colorado, Kentucky, Iowa, Pennsylvania and Utah. Hawaii, Missouri, and Texas are considering laws that would add televisions to their current laws, which only cover computer recycling.

Maine passes law requiring bulb makers pay for recycling

With nearly unanimous support, the Maine Legislature passed new, first-in-the-nation, legislation to reduce mercury pollution by requiring compact fluorescent light bulb manufacturers to share the costs and responsibility for recycling their mercury-containing bulbs. Similar bills are now pending in Massachusetts and Vermont.

"Maine has once again demonstrated national leadership to prevent toxic pollution," said Matt Prindiville, Clean Production project director for Natural Resources Council of Maine. "Mercury-containing bulbs need to be recycled, and this bill ensures ongoing funding for a collection program that works well for consumers and our environment."

This law puts the responsibilities for bulb recycling into the hands of the private sector. It has producers, not taxpayers, pay for the collection and recycling of bulb, with lamp makers having an incentive to manage costs in the most efficient way.

The law sets a standard to limit the mercury content of all lighting, lowering mercury use and hazards to workers and the environment. It also improves the state's procurement policy to purchase fluorescent lighting with low mercury content while maximizing energy efficiency and lamp life.

Retailers may choose to serve as collection centers and inform customers and the State provides oversight and informs citizens about the recycling program. Like Maine's prior laws on thermostats and auto switches, the new law provides a model that other states can follow to reduce toxic pollution.

Compact fluorescent light bulbs are an important part of efforts to reduce energy costs, say environmentalists. Just one CFL can save $30 to $100 on reduced energy costs over its lifetime, but they contain mercury and therefore should not be thrown in the trash.

BASF plans lithium-ion battery material production plant in Ohio

The United States Department of Energy's (DOE) Argonne National Laboratory and BASF, the world's largest chemical company, have signed a worldwide licensing agreement to mass produce and market Argonne's patented composite cathode materials to manufacturers of advanced lithium-ion batteries.

Contingent upon winning a DOE grant under Recovery Act – Electric Drive Vehicle Battery and Component Manufacturing Initiative, BASF plans to build one of North America's largest cathode material production facilities in Elyria, Ohio.

The patented cathode materials licensed to BASF are part of a large and diverse suite of lithium-ion battery inventions and patents developed at Argonne with funding from DOE's Vehicle Technologies Program.

When completed, the proposed BASF facility in Elyria, Ohio is expected to be the largest cathode material production facility in North America.

Argonne's composite cathode material employs a unique combination of lithium and manganese-rich, mixed metal oxides in a revolutionary materials-design approach to extend the operating time between charges, increase the calendar life and improve the inherent safety of lithium-ion cells. Moreover, the enhanced stability of the composite material permits battery systems to charge at higher voltages.

WASTE

EPA is ignoring valuable data on landfill emissions

SWANA and NSWMA express concern over proposed updates to Landfill Emission Factors

The Solid Waste Association of North America (SWANA) and the National Solid Wastes Management Association submitted joint comments on the United States Environmental Protection Agency's (EPA) proposed revisions to AP-42, Fifth Edition, Volume I, Chapter 2.4 Municipal Solid Waste Landfills and the Background Information Document for Updating AP-42 Section 2.4 for Estimating Emissions from Municipal Solid Waste Landfills.

These emission standards are very important to the landfill industry because they affect federal, state and local air quality permits.

SWANA and NSWMA expressed concern on the following issues:

•The rejection of non-methane organic compounds concentration data from NSPS/EG Tier 2 studies using the geoprobe method; and

•The rejection of data submitted in 2000 and 2001 and the failure of EPA to advise of the rejection until 2009.

The two associations hope that through the further review of new data submitted by their members and a thorough review of current published technical literature, EPA can revise the draft AP-42 and background information document accordingly.

To view the letter SWANA and NSWMA sent to the EPA, visit swana.org/portals/solutions/SWANANSWMAFinalLetter.pdf.

Rumpke expands into NE Ohio

Rumpke Consolidated Cos. announced plans to purchase some assets from Republic Services, its largest acquisition in 77 years of business.

Financial terms of the deal were not disclosed. The purchase, which will grow the firm's revenue by eight percent, allows it to enter the Cleveland market for the first time.

The acquisition will include the 300 acre Noble Road Landfill in Mansfield, the Richland County Transfer Station and the Harvard Road Transfer Station in Cuyahoga County. Rumpke will also begin servicing approximately 30,000 residential and 3,000 commercial customers in Ashland, Huron, Knox, Lorain, Medina, Morrow, Richland and Wayne counties. More than 60 vehicles involved in the transaction will service the area's customers. Rumpke will also retain the employees at the facilities.

The Mansfield landfill received its permit in 1994 and began accepting garbage in 1997. There is 21 years worth of air space available on the current plot of land, but there could be additional land on which to expand with the proper approvals.

Rumpke last expanded its footprint in the early 1990s with the purchase of Beech Hollow landfill in Jackson, Ohio. In recent years, a new generation of the Rumpke family has taken the reins and is pursuing regional growth.

Oakleaf names Steve Preston president

Oakleaf, a provider of sustainable waste logistics and recycling solutions, has announced the appointment of Steve Preston as president. He will assume responsibility as president effective immediately and will add the title of chief executive officer later this year. At that time, current CEO Jim Barnes will transition to his new role as Oakleaf's chairman of the board of directors. As chairman, Barnes will remain active in the business, focusing his efforts on large clients, major vendors, and strategic acquisitions.

Preston served under President Bush in the Cabinet as Secretary of the U.S. Department of Housing and Urban Development (HUD) from 2008 to 2009.

WASTE

Industry groups wants EPA exemptions for landfill gas

Proposed standards for reciprocating internal combustion engines could reduce use of landfill gas as fuel

The Environmental Protection Agency (EPA) has proposed updates to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for stationary reciprocating internal combustion engines (RICE), regulations originally finalized on June 15, 2004 (69 FR 33474).

The proposed changes (74 FR 9698) appear to include the same exemption for RICE located at major sources. However, stationary RICE located at area sources do not appear to be covered by the exemption. By subjecting landfill and digester gas-fired RICE to these new requirements, EPA would eliminate numerous and necessary renewable energy projects.

The National Solid Wastes Management Association (NSMWA) and the Solid Waste Association of North America (SWANA) are encouraging EPA to extend this exemption to engines at area sources because they are not different than engines installed at major sources and because the lack of an exemption would force existing renewable energy projects to shut down, resulting in the flaring of landfill and digester gas.

The proposed rule is inconsistent with the efforts of federal and state agencies to reduce greenhouse gas (GHG) emissions, and promote renewable energy and distributed generation requirements. Landfill and digester gas have always been used as a significant source of additional renewable energy to reduce GHG emissions and displace our dependence on fossil fuels.

NSWMA president and CEO Bruce J. Parker noted, "EPA should reconsider its proposed rulemaking on landfill and digester gas-fired engines and include an appropriate exemption from the proposed rule to make it consistent with federal and state policy which strongly supports and promotes the use of renewable fuels – not creating obstacles to renewable energy projects and forcing existing renewable projects off-line."

Remember: Marriage is the number one cause of divorce. It's TRUE! Statistically 100% of all divorces started with marriage.

Oakleaf forms Zero Waste Team

Oakleaf has announced the formation of the Zero Waste Team, the nation's first organization focused on creating national strategies to help industries build workable zero waste-to-landfill solutions. Led by Stephen Caruso, senior vice president of vendor relations and procurement at Oakleaf, the Zero Waste Team will work with businesses to create a solution that is right for their company and their industry.

Oakleaf recognizes that all waste stream solutions must be operationally and economically feasible, and the Zero Waste Team will design programs over existing and emerging infrastructure with a goal of zero waste to landfill. The confluence of Oakleaf waste, recycling and sustainability expertise with vendors providing services including recycling, composting, and even food donation provides the critical mass needed to realize zero waste goals.

Oakleaf has brought together experts in diversion, recycling and science from its leadership in East Hartford, Connecticut with subsidiaries IEM and WasteLess Environmental Services to provide the appropriate mix of experience and service needed by their clients. The Zero Waste Team operates nationwide under the leadership of Caruso, who brings 25 years of experience in waste recycling and related industries. Team members include Peter Klaich, vice president of sustainability and waste reduction, IEM; David Servies, director of resource management at Oakleaf; Dave Roberts, business development manager for WasteLess Environmental Services; and Steven Fass, director of resource management at Oakleaf. Klaich brings to the group exceptional expertise and leadership in organic diversion and the commercialization of biodegradable products. He is currently a board member of the U.S. Composting Council. Servies is a sustainability expert who developed novel organic waste processes to divert grocery organic waste from landfills for one of the world's largest retailers. Roberts has worked in many aspects of organic recovery initiatives, grass roots development and all facets of collection and compost processing. Fass has more than 20 years experience in multidisciplinary environmental management programs.

WASTE

Compost infrastructure grants awarded

Grants totaling nearly $400,000 will allow businesses, colleges and farms in six Pennsylvania counties to reduce their organic waste and put what is left to a better use, Environmental Protection Secretary (EPA) John Hanger announced.

Roughly one-third of the municipal waste generated in Pennsylvania is organic material. Hanger said that by composting organic waste instead of landfilling it, Pennsylvania can free additional waste disposal space, save money by cutting down on municipal disposal fees, and generate additional business opportunities.

The Composting Infrastructure Development Grants reimburse for-profit businesses and nonprofit organizations up to $100,000 for the purchase of machinery or equipment costs associated with increasing the use of organic materials processed at composting facilities in the commonwealth. There are more than 1,600 municipal recycling programs serving nearly 10 million Pennsylvania residents.

Events Calendar

July 14th-15th

Biomass `09: Power, Fuels, and Chemicals Workshop. Alerus Center, Grand Forks, North Dakota.
701-777-5246 • www.undeerc.org

August 7th-9th

Pennsylvania Automotive Recycling Trade Society's Annual Convention & Trade Expo. Sheraton Harrisburg/Hershey, Harrisburg, Pennsylvania.
877-211-0266 • www.parts.org

September 16th-18th

14th International Congress for Battery Recycling - ICBR 2009. Hotel InterContinental, Geneva, Switzerland.
+41 62 785 10 00 • www.icm.ch

September 23rd-25th

19th Annual Arkansas Recycling Coalition Conference & Trade Show. Inn of the Ozarks Hotel & Convention Center, Eureka Springs, Arkansas. 866-290-1429

September 28th-30th

Biopolymers Symposium 2009. Embassy Suites Downtown Lakefront, Chicago, Illinois.
202-309-7296 • www.biopolymersummit.com

September 29th-October 1st

The Green Expo 2009. World Trade Center, Mexico City, Mexico. info@greenexpo.ca

October 27th-29th

Solar Power International 2009. Anaheim Convention Center, Anaheim, California. 202-559-2032 • www.solarpowerinternational.com

October 28th-29th

Canadian Waste & Recycling Expo. Vancouver Convention & Exhibition Centre, Vancouver, British Columbia.
877-534-7285 • www.cwre.ca

November 5th-6th

4th Asphalt Shingle Recycling Forum by CMRA. Doubletree Hotel Chicago, Chicago, Illinois. www.shinglerecycling.org

New report details United States waste industry volume decrease

A new study by Waste Business Journal (WBJ) details the first decline in residential waste generation in more than twenty years. The study also details an even more significant decline in commercial and industrial waste generation, particularly the 20 percent decline in construction and demolition wastes (C&D) that are closely tied to the economy. In the report called Waste Market Overview & Outlook 2009, WBJ estimates that 505 million tons of municipal wastes (MSW) were generated last year in the United States. This was down slightly from 510 million tons in 2007. Collecting, processing and disposing of these wastes generated $55.7 billion in industry revenue during 2008.

Despite the decline in volume, waste firms managed to hold the line on pricing and actually win four to six percent increases that helped them maintain positive revenue and earnings growth, more than offsetting the loss of business. Municipalities have had to follow suit by raising prices as well, especially to cover revenue shortfalls elsewhere in their budgets.

The recent merger between Allied Waste and Republic Services (number two and three respectively) and Waste Connections' bold purchases of assets promises a reshaped industry much further along its path of privatization. The companies understand that one way to deal with turbulent economic times amidst rising fuel, labor and equipment costs is to streamline operations and vertically integrate their markets. Rising costs have focused company managers on disciplined price increases especially now that the industry is more consolidated, more attentive to return on invested capital, more rational about valuing existing landfill capacity and mindful of lessons in the past when pricing was sacrificed.

The more recent decline in fuel costs will benefit company operating margins, however the volatility of those costs implies that surcharges and hedging programs are likely to remain in place. Expect to see continued focus on controlling vehicle maintenance and insurance costs while investing in fleet upgrades and worker safety programs. Additional cash from operations will likely go towards "tuck-in" acquisitions, asset swaps and other vertical integration measures for which companies can reap immediate cost savings.

2008 was a revealing year for the recycling business. Sky high commodity pricing earlier in the year built great confidence in the long term viability of the industry when all at once falling prices were a stunning reminder of its vulnerability. Community recycling programs across the nation took a big hit as the global economic downturn eroded demand and drove down prices paid for recycled materials. Some communities are likely to give up recycling programs altogether, especially since once profitable programs now represent a significant expense. The collapse in the recycling market, where prices were off by as much as 75 to 100 percent, is a direct by-product of the financial crisis and our increasing reliance on markets in China and India, as demand has slumped for material to be converted into everything from boxes, to car parts and construction materials.

Communities may begin to employ flow controls, recently granted them by the Supreme Court, to assure the viability of their recycling programs during these dire times, but are unlikely to get back into the landfill business. The high capital costs and huge economies-of-scale that attend landfills lends advantage to the private sector, especially large publicly traded companies with greater financial wherewithal and the ability to control waste across an entire region, needed to feed larger landfills economically. As new landfills become harder to permit, more waste is moving interstate. New York City now boasts that a third of its waste moves by rail to landfills as far away as South Carolina. Now that state's legislature and that of its northern neighbor have deployed moratoriums on new landfills. Those firms with landfills can expect to wield more pricing power, likely to justify further industry consolidation.

Covanta's first quarter declines with lower energy and commodity prices

Covanta Holding Corporation reported financial results for the three months ended March 31, 2009. Diluted earnings per share were $0.01 in the first quarter of 2009 compared to $0.09 in the first quarter of 2008.

For the three months ended March 31, 2009, operating revenues were $359 million, an 8 percent decline from $389 million in the prior year comparable period, with domestic revenue falling $10 million and international revenue falling $21 million.

Domestic waste and service revenues declined by $11 million. Excluding lower recycled metal revenue ($6 million) and debt service revenue ($4 million), domestic waste and service revenues were essentially flat with contract escalations nearly offsetting lower market prices for merchant waste.

Domestic electricity revenue was up $10 million driven by business acquisitions and contract transitions offset somewhat by slightly lower overall electricity pricing. Most of the domestic energy revenue remains under long-term contract, but a few of these contracts will end later this year causing a gradual increase in the Company's energy market exposure.

Domestic operating expenses were up $17 million in the quarter; $12 million of the increase came from acquisitions the Company completed in 2008.

International segment revenue decreased 34 percent or $21 million in the quarter while plant operating expenses declined by $20 million. Both of these declines relate primarily to the Company's Indian facilities, where falling fuel prices reduced the pass through component of our revenues and also lowered our expenses. Foreign exchange impacts also reduced revenues while benefiting plant operating expenses.

BUSINESS BRIEFS

Murphy named Smurfit-Stone senior VP and CEO

■ Smurfit-Stone Container Corporation announced that John Murphy has been named to the position of senior vice president and chief financial officer. Murphy succeeds Chuck Hinrichs, who has announced his intent to pursue other career opportunities.

From 1998 through 2008, Murphy served in key executive roles with Accuride Corporation of Evansville, Indiana, most recently as president and chief executive officer, and as a member of its board of directors. During his tenure with Accuride, he also served as president and chief operating officer; chief financial officer; and executive vice president.

Murphy has also held key leadership positions with North American Stainless, Inc., Armco, Inc. and Corning, Inc. He began his career with PricewaterhouseCoopers.

Oil Purification Systems to expand

■ Oil Purification Systems (OPS) announced that it has secured $2.5 million in funding from Atlantic Capital Group, Sterling Passive Investments, RDA Ventures, LLC, USA Fund, LP and Connecticut Innovations. The latest round of funding will enable OPS to further expand its product offerings into existing and new industries, and provide increased support for its growing customer base. Additionally, OPS announced that Greg Slawson has been appointed as the company's new chief executive officer.

Before being named CEO, Slawson previously served as OPS' chief operating officer. He has more than 20 years of automotive industry, consulting and software experience, focused on the supply chain and logistics management. Prior to joining OPS, Slawson was vice president of automotive solutions for Global Logistics Technologies.

Thermo Fisher Radiation expands distribution

■ Thermo Fisher Scientific Inc. announced that its Radiation Measurement and Security Instruments (RMSI) business will expand its distribution agreement with ICx Radiation to comprise all of the ICx Radiation product lines. The RMSI team has successfully partnered with ICx Radiation over the last 15 years in the distribution of the Thermo Scientific identiFINDER, as well as the development and launch of the Thermo Scientific Interceptor spectroscopic personal radiation detector (SPRD) in 2006. ICx Radiation is a business unit of ICx Technologies, a developer of advanced technology solutions for homeland and military security based in Arlington, Virginia.

The expanded agreement will enable a wider distribution range of radiation detection solutions including multi-channel analyzers and next generation radionuclide identifier/pager systems.

General Environmental releases first quarter results

■ General Environmental Management, Inc. (GEM), a environmental and waste remediation company, announced the financial results for the quarter ended March 31, 2009.

Some highlights included:

•Revenues for first quarter 2009 were $8.20 million, up 17.9 percent from $6.95 million for the same period in 2008.

•The Company's Mobile Treatment Services business has seen substantial growth and some believe that niche, higher profit margin business units like mobile treatment will provide the opportunity for both top line growth and improved profitability moving forward.

Nucor announces 145th consecutive cash dividend

■ The board of directors of Nucor Corporation declared the regular quarterly cash dividend of $0.35 per share on Nucor's common stock. This cash dividend is payable on August 11, 2009 to stockholders of record on June 30, 2009, and is Nucor's one-hundred forty-fifth consecutive quarterly cash dividend.

Demonstration for auto recyclers is successful

■ Auto recyclers were introduced to a new tool for pulling engines from depleted autos. S.A.S. of Luxemburg, Ltd.'s sales manager, Adam Lindley, and the owner, Paul Secker, introduced the engine puller on a Volvo wheel loader provided by Tyler Equipment that was fitted with solid rubber tires from Advance Tire, Inc.

The Scorpion ran constantly throughout the demonstration, totaling almost 100 motors over a couple of days.

Veolia Environmental employee is awarded

■ Veolia ES Solid Waste announced that one of its drivers, Jean Alexandre, was named by the Environmental Industry Association (EIA) as Driver of the Year for the Large Company Residential category. The EIA annually recognizes the best drivers from around the United States involved in solid waste hauling and recycling services. Alexandre, a resident of Delray Beach, Florida, has demonstrated commitment to his profession, service and quality, and has operated his vehicle in a safe and responsible manner.

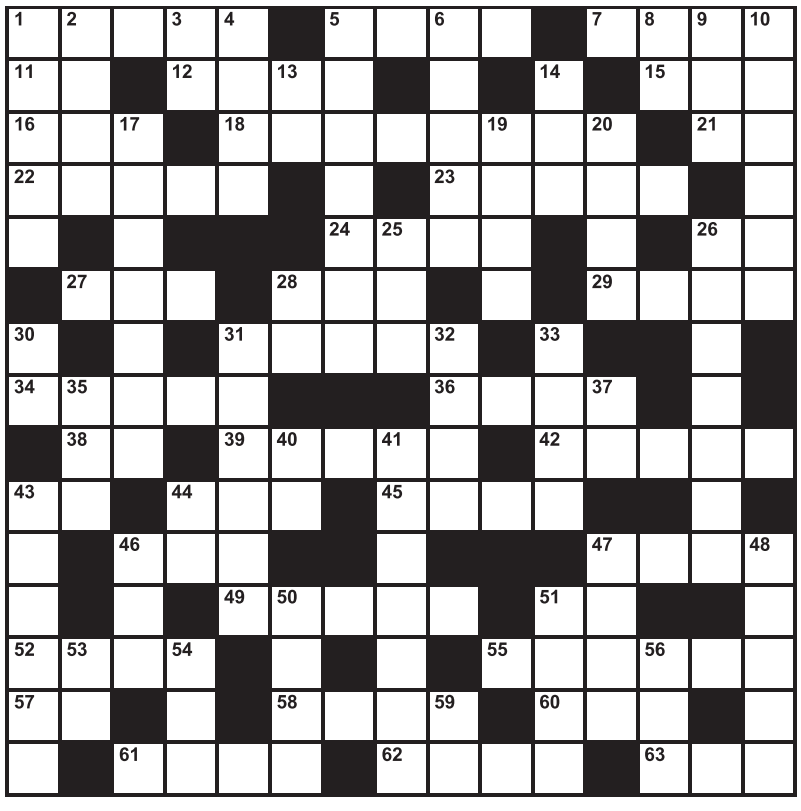
Drivers are nominated and judged on several criteria. These include the number of years refuse vehicle driving experience; motor vehicle records review; accident record; driving certifications – such as defensive driving, refuse driver-specific courses – and driving conditions for current route assignments. Drivers receive recognition in the following categories: Large Company Residential, Large Company Commercial and Large Company Industrial.

Alexandre has driven for Veolia ES Solid Waste since 2003.

MONTHLY CROSSWORD

BY Myles Mellor

SOLUTION FOUND ON PG A26



ACROSS

1. Americans use nearly 100 gallons of this each day
5. One of the most commonly recycled plastics
7. ___-off centers, locations where discards can be left for recycling
11. Advanced payment, for short
12. Canned fish
15. ___friendly, aka green
16. Fixed
18. ___ landfill, an area where waste is dumped, then buried beneath a layer of earth
21. Credit note, for short
22. Worthless material
23. Fiat group cars, informally
24. Minus
26. Gold symbol
27. Appropriate
28. Glass bottles and plastic
29. Open land site where waste materials are burned, left to decompose, rust, or simply remain
31. Portion of solid waste which can be economically recycled
34. Greetings!
36. Artistic work
38. Victory symbol
39. Portions
42. Intense desire
43. Richmond locale
44. ___-consumer, waste made during a manufacturing process
45. And everything else, abbr. (2 words)
46. And so on..., abbr.
47. Former Italian coin
49. VCR button
51. College degree
52. Elmer's, for one
55. Untidy mess of rubbish
57. That is, for short
58. Have to have
60. Aloha gift
61. ___ waste, large items of waste material, such as furniture and mattresses
62. Authentic
63. Residential and commercial trash generated by a particular municipal area, abbr.

DOWN

1. ___ stream, total amount of garbage produced by a community
2. Copier
3. "__ tu, Brute?"
4. Be in a hurry
5. Baler, for example
6. Greek breads
8. Email address intro
9. Recyclable material used to manufacture cardboard boxes, abbr.
10. Make your payment (2 words)
13. Sodium symbol, abbr.
14. A recycling operation that sorts the materials by type
17. Frog beginning
19. As well
20. ___ waste, leaves and grass clippings
25. Pick up time
26. Novice
28. Software recipient
30. Measure of acidity
31. ___ separation, any method that separates recyclables from waste at the point at which they are generated
32. ___ consumer waste, used household materials that go into the trash if they are not recycled
33. Fossil ___, coal, crude oil or natural gas, for example
35. Argentinian idol, Peron
37. South America, for short
40. Compass direction
41. Classroom controller
43. ___ materials, any basic materials for industrial processing that have not been previously used
44. A Cruiser
46. Flightless bird
47. Not on time
48. Recycling logo component
50. Often, just trash!
51. Bottle ___, law requiring deposits on beverage containers
53. __ Monde, French daily
54. French "water"
56. Film director, Burton
59. __inking, process that removes inks, dyes or other contaminants from wastepaper

BUSINESS BRIEFS

Commercial Metals Company's Sudbury retires

■ Commercial Metals Company (CMC) announced that David M. Sudbury, senior vice president, secretary and general counsel, has announced his intent to retire at the end of CMC's 2009 fiscal year on August 31, 2009. Sudbury has served as general counsel and secretary since 1976, vice president since 1981 and was elected senior vice president in 2007. Over his 33 year career with CMC, Sudbury has been and remains active in numerous professional and civic organizations.

Dealerships expand Deere commitment in Russia

■ John Deere announced two new Russian dealers and affirmed its commitment to growing the Russian and CIS (Commonwealth of Independent States) markets.

The dealers, UST (Universal Spetstechnica), based in Moscow, and ACT (Agro-Construction Technologies), based in Krasnodar, will together cover much of Russia. UST's territory will be the Central, Urals, Siberia and Volga Federal districts of Russia, while ACT will represent the Southern Federal district of Russia.

UST is already well known in the forklift and industrial equipment arena. ACT, which has also been a John Deere agricultural dealer, will service Sochi, site of the 2014 Winter Olympics.

ADVERTISER INDEX

Stericycle sets agreement to acquire MedServe

■ Stericycle, Inc. announced that it has entered into an agreement to acquire MedServe, Inc.

Pursuant to the merger agreement and upon completion of the merger, their subsidiary will be merged with and into MedServe and MedServe will become a wholly-owned subsidiary of Stericycle.

MedServe is privately held. It is engaged in the collection, transportation, treatment and disposal of medical waste, hazardous waste, universal waste and other regulated wastes, sharps management services, safety and compliance training services, and other related businesses.

The total merger consideration is $185,000,000 in cash, subject to reduction for MedServe's indebtedness as of the closing date, MedServe's expenses in connection with the transaction, and other expenses related to the transaction. In addition, $27,750,000 of the merger consideration will be deposited in escrow to cover indemnification obligations of the MedServe stockholders under the merger agreement.

Concurrently with the parties' execution of the merger agreement, MedServe stockholders holding a majority of its outstanding shares entitled to vote delivered their written consent approving the merger agreement and the merger.

The merger is subject to customary closing conditions and regulatory reviews, including clearance under the Hart-Scott-Rodino Antitrust Improvements Act of 1976.

Call2Recycle names Todd Ellis regional manager

■ Call2Recycle announced the appointment of Todd Ellis to regional account manager for the Northeast. In this capacity, Ellis will work with Call2Recycle retailers, businesses and communities in Connecticut, Delaware, Indiana, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and Washington, DC to maximize the collection and recycling of batteries.

As regional account manager, Ellis will support participants' efforts to educate consumers on the importance of recycling batteries, as well as identify and recruit new participants to the program.

Ellis has more than 13 years of experience in the recycling industry, having held positions in operations, customer relations, promotion and education. He most recently served as general manager of operations for Sprint Recycling, Inc.

Prior to that, Ellis served as assistant director for the Northeast Resource Recovery Association (NRRA), a nonprofit organization that provides assistance to more than 300 members, maximizing their waste reduction and recycling efforts. Ellis was also the recycling planner for the New Hampshire Governor's Recycling Program where he promoted municipal and school recycling activities throughout the state.

Salmon joins Hydro Aluminum North America

■ Brian Salmon has joined the Extrusion Americas Division of Hydro Aluminum North America as scrap purchasing manager. Based in Baltimore, he reports to John Walters, vice president of commercial development.

Salmon, with more than 20 years of industry experience, will work closely with Rob Kraemer, Metals Markets, and each plant location to secure cost-effective raw materials for the three North American remelt facilities in the Extrusion Americas Division of Hydro.

Prior to joining Hydro, Salmon spent 17 years with Reynolds Metals (now Alcoa) Richmond, Virginia, nine years with ALSCO Metals, and most recently three years with Newco Metals. He has held positions in the recycling and reclamation divisions of those companies.

Nexterra Energy expands sales force

■ Nexterra Energy Corp. a supplier of biomass gasification solutions, announced the addition of three new executives to its North American sales force. The new senior sales executives will be responsible for supporting the growing demand for Nexterra's commercial proprietary gasification technology in key markets, within the institutional and industrial sectors.

Joining Nexterra's sales organization are:

•Jim McNamara, senior sales executive for Northeastern United States. McNamara has extensive executive experience in the renewable energy sector, most recently as chief operating officer at New Energy Capital, managing their portfolio of alternative energy projects. In addition, he spent 10 years in business development and sales at Northern Power Systems. McNamara has developed and managed projects ranging from 30 kW to 20 MW including biomass, solar PV, wind turbines, waste to energy, microturbines, fuel cells, reciprocating engine gensets, steam turbines and combustion turbines.

•Jo-Ann Yantzis, senior sales executive for Eastern Canada and Great Lakes Region. Yantzis brings 25 years of experience in business development and environmental regulatory affairs, including 12 years in the alternative fuel industry. She has held senior sales management roles at Clean Energy, TeleflexGFI, and Lubrizol, and was air quality consultant at Autumn Wind Associates.

•Jonathan Harris, senior sales executive for New Business Development. Harris joins Nexterra from Vancouver-based Westport Innovations, where he was responsible for market development and sales, developing Westport's OEM and direct sales channels and working with strategic customers like Wal-Mart. Prior to that, Harris held numerous engineering roles within the engine development division at Westport.

My mind works like lightning. One brilliant flash and it is gone.

Dale Withers named RMT senior VP, construction

■ RMT, Inc., an energy and environment company, has named Dale Withers as senior vice president, construction services, with responsibility for leading RMT's company-wide construction staff.

Withers is a seasoned construction professional with a 30 year history in the energy sector. As director of construction for Foster Wheeler Energy, he managed large, multi-year projects throughout the United States, the Middle East, Venezuela, Argentina, and the Netherlands. In addition, he has led construction services at Wal-Mart Stores, Inc. and Foster Wheeler Constructors, Inc. Withers also serves as vice president, construction for RMT's parent company, Alliant Energy Corporation and its utility subsidiaries, where he manages the company's new energy projects and clean air projects.

Rick Goebbel joins SC Environmental

■ Rick Goebbel has joined the sales department at SC Environmental, LLC. Goebbel will be based in the Cleveland, Ohio area and will be selling waste and recycling equipment and systems.

SC Environmental sells and services electronic waste, wire, cable and radiator processing systems, balers, shredders, conveyors and scrap processing equipment to many industries. Goebbel was previously a regional sales manager for NexGen Balers.

Flip Screen Australia wins design award

■ Flip Screen Australia Pty Ltd., manufacturer of a range of screening and recycling attachments built for skid steers, excavators, wheel loaders, backhoes and telehandlers was awarded an Australian International Design Mark for its S30 Flip Screen at the International Design Awards. The newly-released E30 Flip Screen, which suits 5 to 10 ton excavators, took out the Most Innovative Product at the 2009 CivEnEx exhibition in Sydney. CivEnEx is Australia's premier exhibition for the public works, construction and open space management Industries.

Hyster celebrates 80 years of lift truck manufacturing

■ Hyster Company, a lift truck manufacturer in North America, celebrates its 80th year as a lift truck manufacturer this year. Hyster Company was born when Willamette Iron & Steel, originally a lumber carrier manufacturer, merged with two other companies in 1929 to form a new company named Williamette Ersted. The name was eventually changed to Hyster Company, a reference to laborers shouting "Hoist 'er!" when a load was ready to be lifted.

For the past 80 years Hyster Company has been dedicated to providing customers with the best value for their investment.

NEW PRODUCT SHOWCASE

MARREL'S NEW SKID-MOUNTED WATER TANK IS NOW AVAILABLE

Marrel Corporation announced the completion of its latest attachment. The skid mounted water tank can be quickly attached to the truck by using the Ampliroll Hooklift System.

While attached the water tank can be used for dust mitigation, irrigation of road side vegetation, and light fire suppression.

The tank is available in 1250, 2000, 3000 and 4000 gallon capacities, pumping up to 325 gallons per minute.

It can be equipped with 3" grooved nozzles, side spray nozzles, and even a water cannon.

Ampliroll
4750 14 Mile Road
Rockford, MI 49341
616-863-9155
www.amplirollusa.com

S+S LAUNCHES PLASTICS FLAKE PURIFYING SYSTEM

S+S Inspection launched their new Flake Purifier. The product brings a new dimension to recycling a range of plastics; PET, PLA and PVC including food grade materials. Using a combination of NIR (near infra red) and CCD (charge coupled device) cameras, extended by state of the art polymer type identification by NIR absorption characteristics, enables the new machines to reliably sort even mixed plastics flakes. The sensitivity of the technology can be used to separate a single combination of color and plastic type from a mixed material stream.

S+S Inspection Inc.
1903 Maryland Avenue
New York, NY 14305
716-297-1922
www.we-so-tec.com

TWIN DRIVE ANTI-FRICTION ROLLER BEARING CRACKER MILLS

Arrowhead International, Inc. is a leading supplier of turnkey ambient grinding systems to recycle tires. Arrowhead introduces new twin drive cracker mills with anti-friction roller bearings. We offer the technology and complete equipment systems to produce ground crumb rubber 10-60 mesh, which meets ASTM specifications. Arrowhead offers cryogenic systems to make 60-140 mesh crumb rubber.

Arrowhead is a supplier of new rolls for cracker mills and compression molding presses.

Arrowhead International
9900 Greenhaven Parkway
Brecksville, OH 44141
440-838-1984
www.arrowheadintlinc.com

AIM ATTACHMENTS OFFERS HEAVY-DUTY GRAPPLE BUCKETS

AIM Attachments now offers grapple buckets that feature durable construction with an AR400 steel cutting edge with reinforced corners and gussets. The GPL Bucket design features an abrasion resistant bottom with thick wear straps. The hydraulic clamps feature a bolt-on middle design that allows the clamps to be used in dual and single configurations.

The bucket is ready for stockpiling, bank loading, as well as excavation tasks. The sloped bottom design provides maximum dump clearance and maintains the breakout forces of the machine.

AIM Attachments
1720 Feddern Avenue
Grove City, OH 43123
800-803-3365
www.aimattachments.com

BOBCAT M-SERIES EXCAVATOR GREAT FOR TIGHT SPACES

Bobcat introduces the new E32 and E35 M-Series excavators in the 3-to-4-ton weight class.

The E32 is a conventional tail swing excavator, and the re-engineered house has reduced the overhang by 45 percent from previous excavators of comparable size. The E35 is a zero tail swing excavator that excels at working on space-constrained jobsites.

Bobcat designed the M-Series excavators to use X-frame undercarriages. This new undercarriage has increased ground clearance and enables better shedding of debris for easier cleanup when work is finished.

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FECON OFFERS NEW RTC-22 MOBILE BIO-MASS CHIPPER

Fecon announced testing for the RTC-22 Mobile Bio-Mass Chipper System. The RTC-22 Bio-Mass Chipper is designed to chip and collect bio-mass. Equipped on a forwarder chassis, the one step in woods process offers a high production rate of 20 to 30 tons per hour.

The RTC-22 features a 22" capacity. The chipper is powered by a 365 h.p. diesel engine making it ideal for bio-mass collection.

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NEW BOBCAT E80 EXCAVATOR WORKS LONG HOURS

Bobcat Company introduces the E80 excavator, a machine with a completely new design with increased service intervals and durability. The E80 excavator has been created to keep operators working longer – including the elimination of daily service points; a spacious cab, a top-of-the-line seat and polymer shims to decrease wear on the lateral pins.

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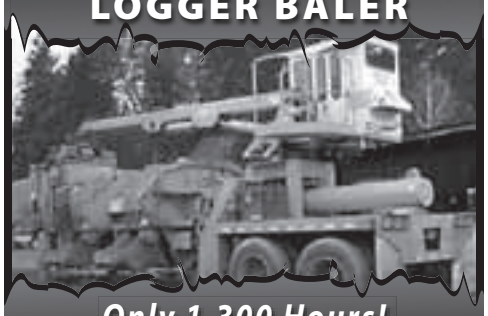

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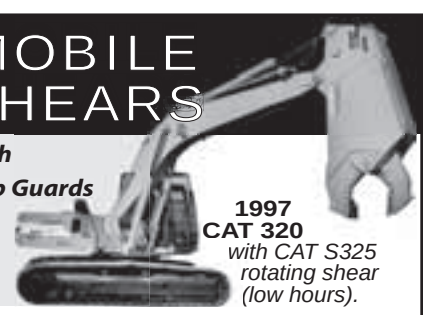

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2005 A934HD (rubber), 50' reach, hydraulic cab, gen-set and grapple.
2003 R944EW (crawler), 50' reach, hydraulic cab, gen-set and grapple.
2001 A934 REBUILT (rubber), 51' reach, hydraulic cab, gen-set and grapple.
2002 A904 REBUILT (rubber), 38' reach, hydraulic cab, gen-set and grapple.
2001 A924 REBUILT (rubber), 40' reach, hydraulic cab, gen-set and grapple.
2000 R914 REBUILT (crawler), 38' reach, 4' cab riser, gen-set and grapple.
2000 A904 REBUILT (rubber), 35' reach, 4' cab riser, gen-set and grapple.
1998 A922 REBUILT (rubber), gen-set, grapple and magnet, no riser.
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CATERPILLAR

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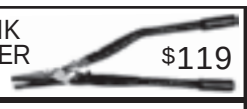

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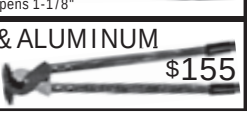

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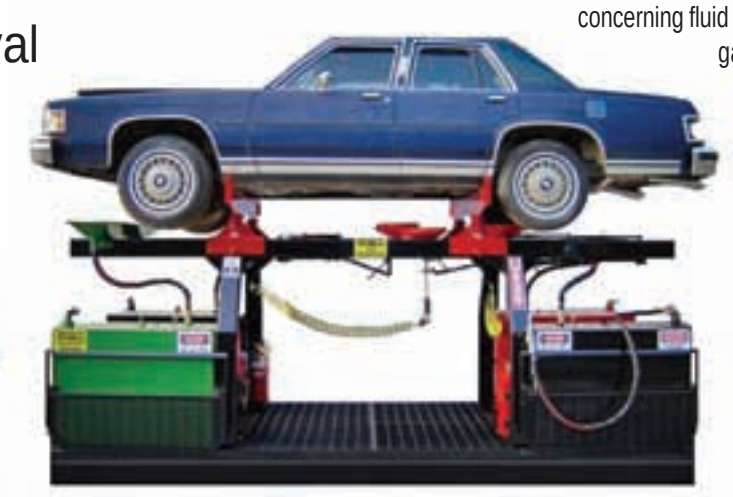

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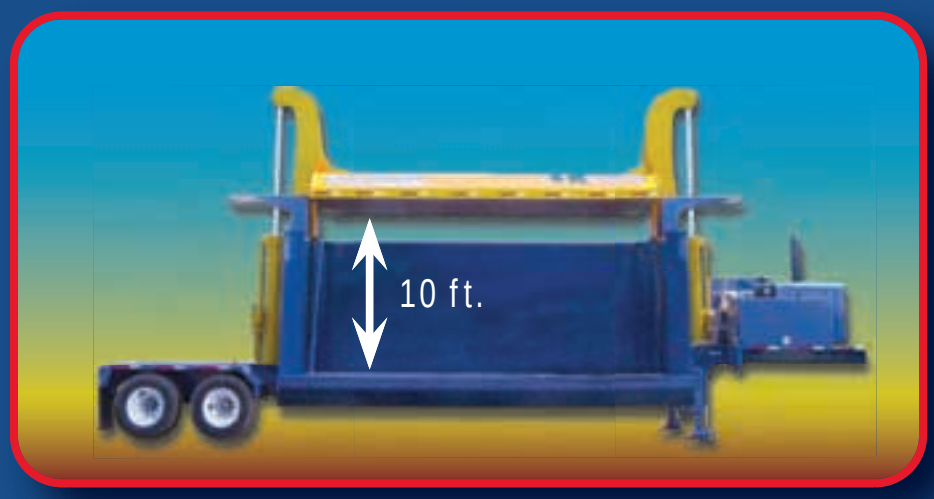

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Green waste is key in high tech compost

by MIKE BRESLIN

mbreslin@americanrecycler.com

PHOTO COURTESY OF INLAND EMPIRE REGIONAL COMPOSTING FACILITY

The Inland Empire Regional Composting Facility (IERCF) in Rancho Cucamonga, California is the nation's largest indoor composting operation. IERCF processes approximately 60,000 tons of green waste and 150,000 tons of biosolids annually to produce 90,000 tons of compost.

According to the United States Environmental Protection Agency (EPA) and various large municipal solid waste agencies, green waste such as yard trimmings, arborist cuttings and food residuals constitute from 25 to 30 percent of the American municipal solid waste stream. That's a lot of biomass going to landfills that could otherwise become useful, environmentally beneficial compost, or feedstock for ethanol production.

Green waste is widely used at landfills as alternative daily cover (ADC) as a substitute for dirt and other material. But there are many options for ADC. For example, besides green waste and compost, California's Integrated Waste Management Board (CIWMB) approves ash and cement kiln dust, treated auto shredder waste, construction and demolition waste, contaminated sediment sludge and shredded tires for ADC.

There are no current CIWMB restrictions on landfilling with green waste or using it as ADC, but regulations are in place to reduce landfill organics by 50 percent by 2020. Landfill operators in California are only supposed to apply an appropriate amount of green waste at the end of the day to cover garbage on the working face of the landfill. Thickness requirements are aimed at reducing the abuse of green waste as ADC.

Because green waste has high carbon value, the last place it should go is into landfills. Composting green waste offers the benefits of resource efficiency by creating useful, natural fertilizers and soil improvement characteristics. High quality compost is in high demand by farmers because of growing consumer demand for organic foods – people who want to avoid ingesting foods treated with chemical fertilizers and prevent the runoff of destructive chemicals from farmlands into the water supply.

But there are emerging national problems associated with large-scale municipal composting. In California, the apparent worldwide leader in implementing environmental regulations, we may be seeing the forerunners of composting regulations to come in other states. "Composting is starting to be regulated by our Air Resources Board because of the smell and by the Water Board due to concerns over ground

See GREEN COMPOST, Page 7

Biomass plays big role in California green energy policies

by IRWIN RAPOPORT

irapoport@americanrecycler.com

The State of California has mandated that the annual percentage of renewable power generated in-state be bolstered by the conversion of a coal-fired power plant in Bakersfield to one that uses local agricultural and urban wood waste to generate clean, renewable electricity.

Millennium Energy, LLC, is converting the Mt. Poso Cogeneration facility, built in 1989, to process biomass. The conversion is estimated to cost $30 million.

"The conversion process of the combustor is minor; Mt. Poso facility's combustor is a circulating fluidized bed type which, by design, is capable of utilizing several varying types of fuel," explained Wayne Terry, Millennium's vice president. He also mentioned, "Some shielding of the super heater sections to minimize erosion and increasing the capacity of the bed classification system are the areas of major concern. The additional ash loading as a result of the use of agricultural wood waste increases the potential erosion.

"Those changes are going to be accomplished in a 30 day outage window as part of the overall conversion," he added. "Because we do not have a fuel staging area for biomass, the largest portion of the investment is developing 22 acres of the facility's property to accommodate the biomass."

Millennium plans to break ground in September 2009 and be ready to utilize 100 percent biomass in July 2010.

The plant currently uses a mix of 80 percent coal and 20 percent biomass.

"We had an opportunity to start the conversion early by adding bio-

See BIOMASS POLICY Page 3

A Letter from the Editor

Dear readers,

Happy Independence Day. I hope you've had a lovely 4th filled with good friends, loud fireworks and grilled food.

As you celebrate this month, some freedom-related events are occurring overseas in Iran. And while American Recycler isn't in the business of reporting on international politics (or taking sides for that matter – we'll keep our opinions to ourselves), the happenings are too interesting not to comment on.

Regardless of how you feel about the current Iranian government or the protesters, the way events have unfolded has really showcased how vastly things have changed when it comes to breaking news and keeping abreast of current events and information.

As you read this, a protester in Iran is uploading cell phone videos to YouTube. Another is micro-blogging what's going on around him or her via Twitter. At the same time, counter-information is being released by the government in response to the protesters. Here in the States, interested individuals have set up systems to cultivate and distill this online information into an ever changing, constantly updating landscape of near-real time events.

Such instantaneous availability of information has implications for every industry. The business that manages to connect with its potential customers and send them timely and relevant information will have the edge over any of their less tech-savvy competitors.

So if you've never heard of Twitter, and are baffled by social networking sites like Facebook or MySpace, it may be a good idea to have your kids give you a crash course in the new social networks. You may be surprised at how many people are out there that have an interest in what your company has to say.

Emerging technology aside, I hope you enjoy this latest issue of American Recycler. Our July Focus Section is all about wood and green waste. From making compost to making diesel, this category of waste is particularly versatile. Green waste is so versatile and valuable, in fact, that someday your yard trimmings may be a hot commodity.

Until then, though, read about what others are doing with their waste, and try to think of creative ways to avoid simply throwing yours away. Oh, and maybe look for us out on Facebook. We'd love to friend you.

Enjoy the rest of your July, and we'll see you next month.

Dave Fournier
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Wood waste generates energy at mills

by IRWIN RAPOPORT
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For the past 80 years the pulp and paper industry (PPI) in the United States has been using the Kraft system to produce pulp – a process that promotes recycling of every part of the tree to generate nearly all of the electricity and chemicals used in the paper making process.

In effect, nothing goes to waste in the process, and this has been instrumental in allowing domestic pulp mills to generate, on average, a very high percentage of their electricity requirements from the use of wood shavings and other byproducts of the trees that otherwise would be disposed of.

"They use every part of the tree," said Carlton Carroll, spokesman and press secretary for the American Forest & Paper Association (AF&PA). "There are several ways to make paper. Probably the most well-known is the Kraft process where wood chips are put into a digester, where chemicals are added. The mix is steamed and the chips are converted into pulp, which is later used to make paper."

When logs enter the mill, they are immediately placed into a debarking machine, with the bark diverted to a burner that generates electricity to power the majority of the manufacturing process. The wood is then converted into uniform-sized wood chips. A scanner detects imperfect chips and diverts them to the boiler.

Nearly 50 percent of the wood chips are fiber, with the other half being lignin. While long-lasting (archival) paper is lignin-free, newsprint, which is meant to have a short lifespan, is a lesser quality paper product that contains lignin.

During the decomposition/digestion process, the lignin is removed by the chemicals in the digestion task. Once the chemicals have completed the task of removing the fiber, the mixture of the chemicals and lignin that is left-over forms a liquid referred to by the PPI as "black liquor," a byproduct that helps to break down the wood chips into pulp.

The black liquor is later diverted to a recovery boiler where it is burned to generate electricity.

"When that is all burned away," said Carroll, "what is left are the chemicals that can be reused over and over again."

Paper mills take advantage of the steam to co-generate electricity via turbines that are placed at the top of digesters.

Nationwide, the forest products industry produces 28.5 million megawatt hours annually, with paper mills producing 27.1 million megawatt hours.

"Paper mills on average produce 75 percent of their power," said Carroll. "Some facilities are able to produce 100-percent of their power from renewable resources."

In most cases, however, a small amount of fossil fuel is still required to light the burners because the black liquor is not very combustible.

"Over the years, papermakers have replaced fuel with carbon neutral biomass," Carroll added.

"It's beneficial both to the bottom line and because the fuel is carbon neutral – they are not releasing excess carbon into the atmosphere like they would if they were burning coal."

Pulp mills have filters and scrubbers installed in their smokestacks to minimize emissions and because chemicals are reused, the practice of dumping them into nearby rivers has ceased.

Because paper making requires large amounts of water, the runoff water is put through on-site treatment plants prior to being released into the environment.

Carroll said that the recycling being practiced by the PPI is not well known outside limited circles.

"But I think the public realizes that the trees are harvested in a sustainable way and that when trees are chopped down, they are replenished by the industry," he said. "The industry can only survive by using natural resources wisely and it knows that and certainly practices that. The use of sustainable forestry and renewable energy sources, like the burning of wood chips, bark and black liquor and the use of co-generation are all based on that philosophy."

> *"Paper mills on average produce 75 percent of their power. Some facilities are able to produce 100 percent of their power from renewable resources."*
> *–Carlton Carroll*

While the PPI is fiercely competitive, via the American Forest & Paper Association's (AF&PA) Agenda 2020 Technology Alliance, the industry is working together to advance renewable energy production and develop technologies to produce paper products more efficiently.

The 2006 Forest Products Industry Technology Roadmap, issued by Agenda 2020, focused on research and development priorities related to forest bio-refineries, sustainable forest productivity, breakthrough manufacturing processes, wood products, fiber recovery and environmental performance of the industry.

A new roadmap will be published later this year.

"Because of significant changes since 2006 and challenges facing the industry," stated an Agenda 2020 press release, "(we) initiated a process in 2008, in partnership with the Institute of Paper Science and Technology at Georgia Tech, for the development of an updated technology roadmap. A Strategic Issues Workshop in December 2008 identified priority issues for which new transformational technologies are needed."

See PULP ENERGY, Page 5

JFERGUSONPHOTOS | DREAMSTIME

When logs enter the mill, they are immediately sent to a debarking machine, where the stripped bark is re-routed to a burner that generates enough electricity to power the majority of the plant.

Biomass policy

■Continued from Page 1

mass to our fuel," said Terry. "We have been burning biomass since the beginning of 2009."

Terry noted that very few plants in the United States have been converted from coal to biomass.

"We are the first converted cogeneration plant in California," he said. "Some of the steam generated from our process will continue to be used to thermally enhance oil recovery efforts in an adjacent oil field."

California legislation calls for the state to produce 20 percent of its annual energy consumption from renewable power. While the state is encouraging this sector, the Mt. Poso conversion is not receiving any state or federal funding. Terry said the business case for the plant conversion is sound and that it could be done in similar areas where there is a guaranteed supply of feedstock.

When it becomes operational, the plant will be producing 44 megawatts (385,440 megawatt hours annually). One megawatt, said Terry, is sufficient in California to power approximately 900 homes. Securing feedstock has not posed a problem as the plant is located in the southern section of the San Joaquin Valley, which has a substantial agricultural sector.

"There is a good supply of agricultural wood, as well as a significant amount of urban material available," said Terry. "The local county and city landfills separate woody material and divert it to biomass energy production, while sending the other material for composting."

What pleases Terry is that business, government and the public are partnering to guarantee this material is not wasted.

The irony is that farmers have historically burned the agricultural waste, which is a major contributor of particulate pollutants in the San Joaquin Valley.

"The State of California is phasing out 'open-burning' of agricultural wood waste, which in turn generates more available fuel for biomass facilities," said Terry, who added that this will also eliminate landfilling or spreading the waste wood, which when it decays, produces methane, a greenhouse gas (GHG). "We estimate the Mt. Poso facility will consume approximately 420,000 tons of agricultural and urban wood waste per year.

"A biomass facility has emissions, including carbon monoxide, but a biomass facility does not add to the carbon cycle by burning fossil fuels that have been sequestered for millions of years. The carbon emissions from a biomass facility are from material that is already part of the natural carbon cycle. In fact, when you consider the reduction in methane, a biomass facility helps clean the environment," Terry said.

Evan Edgar, principal civil engineer of Edgar & Associates, Inc., and regulatory advocate for the California Refuse Recycling Council, has been a vocal advocate of maximizing the recovery of wood from construction and demolition activity to serve as feedstock for power production.

Edgar said that Governor Arnold Schwarzenegger's Bio-Energy Action Plan and Executive Order S-06-06, in conjunction with the adopted AB 32 Scoping Plan, wants to accelerate the Renewable Portfolio Standard (RPS) to reduce GHG by bringing on 350 megawatts of new green power from biomass by 2010, and 1,500 MW of green power from biomass by 2020.

"With 1 million bone dry tons producing 150 MW of power, the potential new market could be 1 million tons of wood chips from the MSW sector to biomass energy in 2010," said Edgar, "and 4 million tons of wood chips from the MSW sector to biomass energy by 2020, potentially diverting all of the 4 million tons of lumber that was disposed as solid waste in California landfills in 2003."

Currently there are 32 biomass plants operating in California that are producing 660 MW, with 11 plants that are idle, which could produce a further 122 MW if re-opened.

Edgar also noted that several biomass plants have dismantled.

"All of the biomass plants that have closed have done so for economic reasons," he said, "and the inability to compete on price with fossil-fueled generation, where there are hopes that the increase in the RPS and an increase in the wholesale price of renewable energy will re-power the idle capacity and bring on new facilities.

"The amount of fuel used per year peaked at 6.4 million tons in 1990, bottomed out at 4.4 million tons in 1996, and is now operating at 5.2 million tons per year," he added, "Over the years, the supply of biomass materials has been a blend of mill residue, in-forest residue, agricultural wastes and wood chips from MSW sources, with MSW wood chips taking the lead in 2001 and now supplying over 40 percent of the market as tracked by The Green Power Institute."

According to the Green Power Institute statistics, wood chips production from MSW peaked at nearly 1 million tons in 1992, and bottomed out at 0.5 million tons in 1995. Production steadily increased to 1.5 million tons in 2004, but declined to 1.2 million tons in 2006. Production nearly doubled (2.1 million tons) in 2008.

Edgar said the price per ton of wood chips has been volatile. The price peaked at $40 plus in 1990, but between 1994 and 2001, declined to the $14 to $18 range. Since 2003, when the price rose to $25, it has been steadily rising, which is helping to stimulate production.

To better understand the role of wood chips in energy production in California, Gregg Morris, a director with the Green Power Institute, has created CA Biomass Fuel Supply Curves for Northern and Southern California and has related wholesale electricity pricing to biomass fuel pricing analysis.

"As wholesale prices average 9 cents per kilowatt hour," said Edgar, "the fuel price hovers around $30 per ton. As the RPS to increase renewable energy is pushed from 20 percent in 2010 to 33 percent in 2020, the wholesale electricity price now being almost 12 cents per-kilowatt hour, should continue to increase the price of wood chips.

"The current 660 MW operating capacity would need to increase over 50 percent over the next few years," he added. "Biomass energy represents just 2.4 percent of the state's energy consumption in 2006, and could reach 6 percent of the state's needs by 2020. Reaching the RPS is banking on biomass power increasing by 250 percent over the decade."

Feedstock is essential to the production of biomass and of the 40.2 million tons of municipal solid waste disposed of in California landfills in 2003, this almost 4 million tons of lumber.

Due to a decline in new construction and a launch of C&D processing activity, Edgar estimates that the landfilling of lumber is now about 2 million tons. But with the value of wood chips being appreciated, particularly as the 140 MW biomass plant capacity has come on-line since 2006, increased wood chip production from the MSW sector is diverting more wood from landfills.

"The statistics clearly support the fact that the increased demand for renewable energy increase the supply of biomass fuel and garners higher prices," he said. "Incremental demand calls for a greater supply at a higher price."

The California Energy Commission (CEC) released a report, An Assessment of Biomass Resources in California, 2007, where CEC determined that there are 83 million bone dry tons (BDT/y) of biomass resources in California, projected to increase to 98 BDT/y by 2020.

"The current technical recoverable potential includes 9.6 million BDT from MSW in 2007," he added. "Biomass from the agricultural, forestry and MSW sector that would be technically feasible to obtain totals 32 million BDT in 2007, increasing to 40 million BDT in 2020. The demand for biomass will grow where up to 12 million tons of biomass could contribute to producing almost 6 percent of the state's energy needs to assist in achieving the 33 percent RPS goal in 2020."

The CEC study determined that there are 32 million tons of retrievable biomass from landfills, forests, and agriculture to reach the RPS in the near term, still setting aside 20 million tons to produce bio-fuels.

Edgar stresses that some of the mothballed biomass plants and those that have been dismantled employed older technologies.

"Future bio-conversion facilities will be leaner and cleaner, and would qualify as distributed generation projects," he said. "Be ready to add small green boxes at your MRF that use up to 40 TPD of your clean wood chips and produce 1MW; use that green power on-site, and sell the rest back to an investor-owned utility, whose usage would qualify as part of their quota needed to reach their RPS goal.

"New types of conversion technologies producing many types of fuel products to meet future mandates will be facing new statutory definitions," he added. "These facilities will be chasing the 12 million tons of biomass supply for the RPS, as well as the other 30 million tons of biomass for bio-fuels, in this competitive Bio-World."

ULRICH MUELLER | DREAMSTIME

Securing biomass feedstock has not posed a problem as the plant is located in the southern section of the San Joaquin Valley, which has a substantial agricultural sector.

EQUIPMENT SPOTLIGHT

Incinerators/ Trench burners

by MARK HENRICKS
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Air curtain burners can reduce by 97 percent the volume of wood waste and other combustible materials by burning in an in-ground dirt trench or above ground firebox. A strong current of air forced over and through the burning materials helps greatly to reduce particulate matter emissions, including smoke and ash. While their main application, clearing land for real estate development, is slow right now, air curtain burners are finding new customers in storm debris cleanup, forestry, construction, landfills and transfer stations.


Air Burners, LLC

At Air Burners, LLC, in Palm City, Florida, Norbert Fuhrmann, director of sales and marketing, said the company's in-ground trench burners and aboveground fireboxes are useful when there is a waste stream consisting primarily of clean wood waste. "Extraordinary uses, mostly by the government and military, include diseased carcass disposal and general waste disposal at overseas United States military installations, especially in the war theaters," he said.

"Our equipment is affordable, has a long useful life of 12 to 15 years, is very simple to operate and has a very low operating cost – basically the cost of two to three gallons of diesel fuel per hour," Fuhrmann said. The company makes a wide array of models, the most popular of which are the S-327 and S-220 Refractory Walled Air Curtain Burners. Both are above ground box burners shipped fully assembled. The S-327 employs an 85-h.p. Kubota or equivalent engine pushing air through a firebox measuring approximately 27 feet long by 8 feet high and 8 feet wide. The S-327 can process from 6 to 10 tons of waste per hour.

Air Burners' latest model is a standard firebox coupled with an off-the-shelf electric power generating turbo-expander that can produce up to 350 kilowatts. Fuhrmann expects the Powergen Firebox to be Air Burner's hottest seller. "Although some of our machines heat greenhouses or dry soil or wood, until now we could not offer a solution to convert the wood waste to electricity," he said. "Now we have overcome that also."

Regulation obstacles remain for the industry, however. "Our challenge is to demonstrate that our machines are much more cost efficient and more environmentally friendly than the debris disposal alternatives of chipping/grinding and hauling and dumping of the chips or wood waste in landfills or composting," Fuhrmann said.

Nevertheless, Fuhrman said that beetle infestations calling for destruction of large volumes of diseased trees, wildfire management programs and availability of economic stimulus funds have helped forestry applications remain very active. "Market for the power generating versions will be power companies that are obliged to furnish power to communities remote from the grid and need to clean hydropower reservoirs, national parks in western states and landfills and transfer stations throughout the country," he added.


Concept Products Corp.

At McPherson Systems, Inc. in Tifton, Georgia, president Don McPherson presides over the design and manufacture of permanent and portable pit, trench and box burners. McPherson said burners make debris clearing and other applications considerably more effective by reducing the volume of burnable waste by approximately 97 percent, using a proven, reliable technology. "There's no big secret to it," said McPherson. "It just puts a lot of air on the fire, into the fire and under the fire."


Waste Reduction Technologies

McPherson's 30-foot M30F Air Curtain Destructor is its most popular trench burner. It has a 110 h.p. Cummins engine spinning a fan that moves 40,000 cubic feet per minute. The company also builds the 40-foot M40F. McPherson's most popular box burners are its M-15 and M20E models. The M30FRP Portable Refractory-Lined Pit is a larger unit transportable by semi-trailer.

McPherson started building burners in 1985 and became popular in the wake of the massive debris-clearing effort in South Florida following Hurricane Andrew in 1992. Since then, the company has come to rely on land clearing for real estate development. As that market has fallen, they have sold burners for cleanup after Midwestern tornadoes and to government contractors deploying them in locations such as Afghanistan and Kosovo for general waste disposal.

At Concept Products Corporation in Paoli, Pennsylvania, vice president Steve DiMascio said the appeal of his company's air curtain trench burners rests on their ability to save money. "It's the cheapest, most cost-effective way to dispose of land clearing debris off of job sites for new construction," he said. "It's the most cost effective way because you're not hauling it away period. You have no trucking costs. Even if you grind, you still have to haul the product. With the air curtain you handle it once when you bring it over to the pit, and it's gone."

Concept Product's most popular machine is its Air Curtain Destructor CP2000T. DiMascio said the CP2000T's fan and manifold design produce greater airflow while consuming a smaller amount of horsepower. "In other words, it's the most efficient running machine," he said. The CP2000T pushes through 22,240 cubic feet of air per minute, employing a 33 h.p. diesel engine. That model is 20 feet long, and the company produces varying models up to 40 feet long.

While pollution controls are affecting sales, DiMascio notes trench burning is safer and produces fewer pollutants compared to alternatives such as open burning. "We're burning much cleaner because we're burning at higher temperatures," he said. "When you're burning at 2,000 degrees it burns much cleaner."

Thus far, Concept Products has found tough sledding when seeking our new customers and applications. "With the restrictions on burning, it's tough to branch out into other markets," DiMascio said. "But it does a good job for what it's designed for."

Manufacturer List

Air Burners, LLC
Norbert Fuhrmann
888-566-3900
www.airburners.com

Concept Products Corp.
David Wilson
610-722-0830
www.conceptproducts.com

McPherson Systems, Inc.
Don McPherson
229-386-2367
www.mcphersys.com

Waste Reduction Technologies
Nathan Bergeron
225-927-2019
www.smokelessfire.com

CleanTech finds investors for sugar technology

Burrill & Company and Khosla Ventures have invested in HCL CleanTech, a United States company and its Israeli subsidiary founded by Avram Baniel, Ari Eyal and Eran Baniel. HCL CleanTech has developed a proprietary technology to make an old, industrially proven German process converting lignocellulosic biomass to fermentable sugars economically very attractive. It is these fermentable sugars which are considered the gateway to advanced biofuels (biobutanols, biodiesel, jet fuel etc) and biochemicals (bioplastics etc). Modern chemical technology makes the implementation straightforward and immediate.

HCL CleanTech's use of concentrated hydrochloric acid (HCl) efficiently hydrolyzes all cellulosic materials and so allows a large variety of feedstocks to be used with minimal configuration, it requires very little water and is completely self sufficient energetically. This new technology can also clean and improve the recovery of the acid in other industrial streams containing dilute HCl.

"Accessing cheap sugar locked in biomass is one of the greatest challenges now faced by those pursuing renewable fuels and chemicals. HCL CleanTech's technology represents a step change in accessing these sugars, and drops into the pretreatment step of any fermentation-based process or chemical reforming technique which starts with oligosaccharides," said Burrill & Company director, Greg Young. "We are eager to see this proven at scale, at which point it becomes immediately relevant to adjacent industries aiming to use biomass as a feedstock."

Burrill & Company and Khosla Ventures were joined in this Series A round of financing by Zohar Gilon, the lead seed investor, and the founders. The proceeds will serve to continue R&D in Israel and build a pilot plant in the States to be completed in 2010.

AR EQUIPMENT SPOTLIGHT

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

To be listed in the appropriate spotlight, please call 877-777-0737.

UPCOMING TOPICS	
08/09	Engine Pullers
09/09	Alternative Energy Garbage Trucks
10/09	Sweat Furnaces
11/09	Portable Shears
12/09	Solar Systems

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

Pulp energy

■Continued from Page 2

Last April, a Technology Roadmap Workshop identified priority technology objectives and R&D needs in the priority areas, including the need to reduce carbon emissions and energy consumption in manufacturing by:

•Renewable sources for non-steam thermal demand – use biomass to replace fossil energy.

•Reducing energy intensity of fiber preparation.

•Reducing energy required to wash pulp and prepare black liquor for firing into the recovery boiler by 50 percent.

Another goal is to significantly lower fresh water intake in mills and plants by the:

•Separation of reusable water from dilute contaminants (both inorganic and organic).

•Removal of non process elements (NPE) from the chips prior to pulping.

•Improvement of process modeling tools (engineering).

Towards developing new product features, the plan is to:

•Achieve a 20-50 percent improvement in performance/weight ratio.

•Create functional interfaces between inorganic materials and value-added cellulosic materials.

•Understand and exploit self assembly and non-covalent interactions of wood-based materials.

•Develop bio-based coatings and fiber treatments that can replace non-renewable polymer films used in current and future packaging designs (flexible & rigid).

Improving recovery and recycling of waste wood and paper products is also important and this can be achieved by:

•Enabling recycled fibers to have equivalent runnability to virgin fibers.

•Developing filler separation techniques from recycling mill wastes.

The Agenda 2020 technology goals are clear, including advancing the forest bio-refinery. This is being accomplished by:

•The creation of the $2.9 million Value Prior to Pulping (VPP) program, a multi-year research program investigating the extraction of hemicelluloses from wood chips before pulping and converting them to ethanol. VPP is supported by DOE and eight member companies, and involves six universities in a collaborative project.

•An analysis of the benefits of black liquor gasification completed by Princeton University in 2006.

•Seeking opportunities for collaborative programs that target biofuels, bio-refineries integrated with pulp mills and getting value from woody biomass in new ways.

Maximizing recycling at the paper making stage is critical when the PPI asks the public and businesses to place paper products into recycling bins.

"Last year the paper recycling rate hit an all-time high – 57.4 percent," said Carroll. "We hope to reach our goal of recovering 60 percent of all paper produced in the United States by 2012, which was set this year. Our companies benefit from paper recycling and when we ask people to do their part, we have to show that we are on the same page."

DENIS PEPIN | DREAMSTIME

Pulp mills have filters and scrubbers installed in their smokestacks to minimize emissions.

Rentech plant to produce synthetic diesel from urban waste

Rentech, Inc. announced a plan to build a plant in Rialto, California for the production of ultra-clean synthetic fuels and electric power from renewable waste biomass feedstocks.

The Rialto Renewable Energy Center (Rialto Project) is designed to produce approximately 600 barrels per day of pure renewable synthetic fuels and export approximately 35 megawatts of renewable electric power that is expected to qualify under California's Renewable Portfolio Standard (RPS) program, which requires utilities to increase the amount of electric power they sell from qualified renewable-energy resources. The plant will be capable of providing enough electricity for approximately 30,000 homes.

RenDiesel™, the renewable synthetic diesel to be produced at the facility, meets all applicable fuels standards, is compatible with existing engines and pipelines and burns cleanly, with emissions of particulates and other regulated pollutants significantly lower than the emissions from the combustion of CARB ultra-low sulfur diesel.

The carbon footprint of the plant is designed to be near zero as the fuels and power would be produced only from renewable feedstocks. The low carbon footprint of RenDiesel would help the transportation sector meet targets established by the Low Carbon Fuel Standard Executive Order 1-S-07 to reduce the carbon intensity of transportation fuels by 2020.

Rentech has entered into a licensing agreement with SilvaGas Corporation for biomass gasification technology for the Rialto facility. Between 1998 and 2001, a 400 ton-per-day plant using the SilvaGas biomass gasification technology successfully operated in Burlington, Vermont, producing synthesis gas (syngas) from wood-based biomass in a series of operating campaigns. That plant was built in partnership with the United States Department of Energy, Battelle Columbus Laboratory and the National Renewable Energy Laboratory (NREL).

Rentech's proprietary technology for the conditioning and clean-up of syngas will provide the next link in the technology chain after gasification. The conditioned syngas will be converted by the Rentech Process in a commercial scale reactor to finished, ultra-clean products such as synthetic diesel and naphtha using upgrading technologies under an alliance between Rentech and UOP, a Honeywell Company. Renewable electric power will be produced at the facility by using conventional high-efficiency gas turbine technology. The power is anticipated to be sold to local utilities under the California RPS program.

Having completed preliminary scoping studies, Rentech has engaged Jacobs Engineering Group Inc. to conduct the feasibility engineering phase of the project, which is expected to be completed over the next several months. This work will advance project development activities including preliminary design and plot plans and provide construction cost estimates that would then continue to be refined throughout the subsequent detailed engineering phases of the project. Based on the range of current preliminary scoping cost and yield estimates, the Rialto Project is expected to provide rates of return that would make the project commercially viable.

Rentech has an exclusive option on a site for the Rialto Project within the proposed Rialto Eco-Industrial Park, which is located adjacent to an existing City of Rialto Wastewater Treatment Plant and EnerTech Environmental Regional Bio-Solids Processing Facility. The location allows the proposed Rialto facility to take advantage of established infrastructure including access to water, wastewater disposal and zoning.

The primary feedstock for the Rialto Project will be urban woody green waste such as yard clippings, for which Rentech is currently negotiating supply agreements. The location of the project will provide local green waste haulers with a cost-effective alternative to increasingly scarce landfills for the disposal of woody green waste. The plant is designed to also use bio-solids for a portion of the feedstock which is expected to be provided under a supply agreement with EnerTech Environmental.

Construction of the Rialto facility is expected to create approximately 250 jobs with at least 55 permanent jobs during operation, based on the preliminary design work completed to date.

A Closer Look

by Donna Currie

Green Waste Recovery

Michael Gross • 408-263-2384

GreenWaste Recovery is part of a family of companies that includes a material recovery facility in San Jose that sorts and recovers 85 percent of household waste. The sister companies are Zanker Materials Recovery & Landfill and Z-Best Composting.

The companies are privately owned, and got their start in 1984, founded by Rich Cristina and Jesse Weigal, according to Michael Gross, the company's marketing manager. Gross started working for the company in 1989, after running a garbage company in Arizona.

Gross said that the partners had an opportunity to use an old landfill that had an estimated five years of life left. "We still haven't filled up that landfill yet," Gross said, although it is now nearly at capacity. Since then, the company opened a second landfill, but the goal is to fill it as slowly as possible.

The company's Zanker Road landfill takes in wood waste, yard waste, concrete rubble, demolition debris, cardboard, gypsum, metal, bulky items and green waste, then sorts and processes it and sells base rock, soil amendment, mulch, organic compost, top dress compost, agricultural gypsum and planter mix commercially and to the public.

Gross said if a typical San Jose home was dropped into the landfill, it would take about a half-hour to separate the materials for recycling, and that 90 percent would be reclaimed.

Besides keeping the material out of landfills, Gross said that another benefit to the consumer is that the colored wood mulch is about a quarter of the price of mulches made from virgin materials. "They look good, and they last a long time," he said.

Gross said that since he's been involved in the business, the two biggest changes have been the increased use of automation in processing the material and the greater number of markets for the finished products. "People are embracing recycling. In 1989, the company sold about 10,000 tons of soil amendments, but now it sells 130,000 tons of compost alone." The composting operation is one of the biggest in the state of California, according to Gross.

The company is constantly looking for ways to recycle more materials, and has even found a successful way to recycle asphalt shingles. "We're doing things that no one has done before," Gross said.

While some companies feel the squeeze of government regulations, Gross said that he has seen the benefits. He said that when he was a child, the smog was a huge problem in the area, but now, "we can actually breathe the air," he said. "Now every day you can see the mountains."

He said that as the company has grown "we're getting better at what we do." Gross said that he's particularly proud of the fact that his company is recovering and selling sand, pea gravel and drain rock, since it lessens the need to import those materials from Canada and Mexico.

But although there are good markets for rock, Gross said that some markets are drying up, such as the market for plastic film. "We can't sell any right now," so the emphasis needs to be on reducing waste streams and eliminating items that can't be recycled or reused. He said that the dependency on foreign markets to buy recyclables is also a problem. "We should be shipping down the street," he said, adding that we need to bring more manufacturing back to this country.

"We need to get into green jobs," Gross said, explaining that the green industry requires "a whole cross section of people" from the marketing people to the politicians to the consumers, but that he foresees that the "the greening of everything" is on its way.

But it's not all about the big picture. GreenWaste has taken the local community of Alviso under its wing and participates in the community's annual Santa Program. Near Christmas, kids meet Santa, have lunch and receive a gift. Last year, 650 kids attended. "You've got to be part of the community," Gross said.

Green compost

■Continued from Page 1

water contamination," said compost information specialist Charlene Graham at CIWMB. In addition, air quality regulators such as the South Coast Air Quality Management District and the San Joaquin air district have rules that require the reduction of volatile organic compounds and ammonia which are typically emitted from composting operations.

Besides these concerns, even the best managed outdoor composting operation is challenged to achieve and maintain temperatures over 131 degrees Fahrenheit throughout the pile to ensure that all seeds and pathogens are killed. High quality compost has value, while lower quality compost has lower value.

That's why the Inland Empire Regional Composting Facility (IERCF) in Rancho Cucamonga, California may be a prototype for the future of municipal green waste and biosolids composting. It's all indoors and produces consistent, high quality compost which is in high demand within its marketplace. And because emissions are tightly controlled with the use of a biofilter, a plant of this type can be located in an urban area, thereby reducing trucking expenses to remote sites.

IERCF's 454,000 square-foot facility (a former IKEA warehouse) is fully enclosed and equipped with a high tech air filtration system. Its roof has a one megawatt photovoltaic installation that provides about half of the plant's electricity. Water used for the composting process is supplied by the adjacent Inland Empire Utilities Agency's recycled water program. After water is used for composing it is piped back for retreatment and re-use. Thus, air and water problems are solved and the solar system significantly reduces its carbon footprint, making it a synergistically green recycling solution.

The plant is located in San Bernardino County in a heavy industrial section, just west of Los Angeles County, and draws its green and wood waste feedstock from a 60-mile radius. Biosolids come from the Inland Empire Utilities Agency and the LA County Sanitation District, the partners that operate the facility. Green waste consists of brush, trees and yard trimmings, bedding straw supplied by horse stables and from municipal material recovery facilities, as well as tree and lawn services.

Annually, IERCF is now processing approximately 60,000 tons of green waste and 150,000 tons of biosolids to produce 90,000 tons of high quality compost. Biosolids consist of treated wastewater, essentially water and nutrients. "Green waste is critical to our composting process. To have a balanced compost heap you have to have carbon, nitrogen and oxygen. The wood provides the porosity for the oxygen to move into the pile and the carbon makes for a good carbon-to-nitrogen ratio for the compost," said Jeff Ziegenbein, deputy manager of Operations for IERCF.

To avoid smelling up the neighborhood, biosolids, wood and green wastes are delivered by tarp-covered trucks that are unloaded indoors after the loading dock doors are sealed. Composting is done through the EPA-approved Aerated Static Pile (ASP) composting method that mixes materials in large piles, rather than in traditional windrows that places material in long piles where they decompose naturally over a period of several weeks.

With ASP, air is pulled through the composting material during a four-step process of mixing, active composting, screening and curing. Air is constantly circulated through a massive biofilter to remove odors and regulated compounds before it is exhausted to the atmosphere. Up to 12 air changes per hour occur within the facility. Exhaust fans are automatically controlled by temperature sensors in the piles.

The IERCA plant also incorporates recycled wood in its biofilter system. This consists of 50,000 cubic yards of a special blend of wood chips covering a 3 acre area, approximately 8 feet deep. The wood chips are placed on a perforated, ground level floor. Air is piped into the perforated floor where it slowly passes through the media before exhausting to the atmosphere. Every two to four years the wood chips in the biofilter are replaced. The wood blend is a combination of fruit and nut tree woods and recycled wood from trees destroyed by bark beetles. A sprinkler system above the filter keeps the wood chips wet. Air handling pipes constantly suck air from the facility into a giant header, 12 feet in diameter and 1,000 feet long located under the biofilter. "Inside of the composting building it smells like compost, but you can walk by the biofilter and there is no perception of odor," Ziegenbein commented. The air is then pushed through the eight-foot layer of damp wood chips where it is treated before being exhausted into the atmosphere. Air emissions are monitored by the South Coast Air Quality Management District, which has some of the most stringent air quality standards in the country. Plant operations are also inspected by Cal EPA and the California Integrated Waste Management Board.

INLAND EMPIRE REGIONAL COMPOSTING FACILITY

The compost can be used in a variety of applications to provide benefits such as improved soil quality and plant growth, control of sediment runoff and erosion and revitalization of compacted or sandy soil.

JOAN RAMON MENDO ESCODA | DREAMSTIME

Active composting takes approximately 22 days before the pile is screened and moved into curing. Larger pieces are screened and recycled back to the mixing operation to be processed again.

Active composting takes approximately 22 days before the pile is screened and moved into curing. Larger pieces screened from the compost are recycled back to the mixing operation and processed again. During curing, which takes between 30 to 38 days, the material stabilizes and is ready for distribution. Load out of finished compost is also done indoors in a sealed environment.

"Our high quality compost is wholesaled out in bulk to about 75 local customers who use the product as a soil conditioner, a top dressing or bag it," said Ziegenbein. The product is sold under the name SoilPro Premium Compost (a brand name registered by IERCA) in retail outlets such as Home Depot. It also has many commercial turf applications, such as for golf courses and soccer fields. According to Ziegenbein, SoilPro is a well decomposed, stable and weed-free source of organic matter containing a full spectrum of micronutrients necessary for healthy plant growth, and has a pleasant earthy odor. Unlike many composting operations, SoilPro appears to be supported by a well designed marketing plan with distinctive logotype, detailed product information for resellers, including a guaranteed minimum nutrient analysis, a list of product benefits and application coverage data.

"The good news about our operation is we use all recycled water, a significant portion of renewable energy and the compost has a high value that's helping our rate payers," Ziegenbein said. Before IERCA opened this plant, it trucked biosolids from Southern California to Arizona where it was applied on farms raising non-food crops such as cotton. Besides reducing high trucking expenses and related transport pollution, IERCA now has a value-added product that has had all weed seeds and pathogens destroyed in the composting process. SoilPro can be used for non-food as well as food crop applications. By using high quality compost, growers can reduce or eliminate the use of chemical fertilizers that have high solubility that tend to leach into groundwater and contaminate it with phosphates, nitrates and other harmful chemicals.

Since SoilPro compost is a wood-based, nutrient-rich soil conditioner it can be used in a variety of applications to provide many benefits. While its primary mission is to improve soil quality and plant growth, it helps controlling sediment runoff and erosion and revitalizes compacted or sandy soil. Compost also benefits water conservation by acting like a sponge, holding water until plants need it.

The real cost driver for IERCA is treating biosolids, but the plant needs the appropriate amount of green waste to do it properly. IERCA can work with MRFs if they can separate out a clean, green stream that works in its operation. More operations like IERCA can allow MRFs to have another reliable recycling outlet that helps keeps green waste out of landfills.

"We are a test case. We believe this type of operation can be located in many urban areas. Right next to us we have a very large correctional center. That's rather challenging because you have a lot of people who don't want to be there in the first place. If we had odors or complaints about health concerns, they could become a tough neighbor. But we have had zero issues because we have a very good biofilter with a team monitoring it to ensure that it functions properly with no odor issues. We've had no complaints. Something like this could be sited almost anywhere," Ziegenbein concluded.

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