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FOCUS: **ALTERNATIVE ENERGY**

Natural gas threatens future of alternatives



WHAT'S INSIDE

- Safelite AutoGlass begins national recycling program. Page A5
- AFRA launches guide for recycling aircraft materials. Page A6
- Worldwatch Institute: Global metals production recovers. Page A15
- EPA to allow a percentage of renewable fuel in gasoline. Page A17
- Waste-to-energy technology moves from the lab to the marketplace. Page B3
- Juhl Wind closes Power

Engineers acquisition. Page B	/
Scrap Metals MarketWatch	15
Salvaging Millions	16
Business Briefs	18
Advertiser Index	19
AR Classifieds	20
Equipment Spotlight	B4
A Closer Look	R6



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Country of Turkey tops the list of U.S. scrap metal consumers

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by MARK HENRICKS mhenricks@americanrecycler.com

As China's once voracious appetite for scrap metal has moderated, Turkey's has sharply increased. As a result, the country of 74 million has become the world's largest consumer of scrap metal from U.S. recyclers. Turkey's consumption of more than 5.6 million tonnes each tonne equals 1.1 tons or 2,205 lbs. of U.S. ferrous scrap during 2011 was up 29.2 percent from less than 4.4 million tonnes (4.8 million tons) in 2010, according to a report by American Metal Markets.

As recently as 2009, the picture was very different. With 24.6 tons of scrap metal exported that year, the U.S. was the world's dominant supplier, producing almost as much as the total of the next two on the list, namely, the European Union with 16.8 million tons and Japan with 10.3 million tons. While in 2009 Turkey was already the top purchaser of EU-sourced scrap metal, consuming a robust 8.3 million tons, it was well behind China when it came to taking U.S. scrap.

In that year, China imported 6.8 million tons of U.S. scrap metal. Turkey was well behind in second at 4.1 million tons, closely followed by South Korea with 3.4 million tons. Taiwan, with 2.4 million tons and India, 1.1 million tons, rounded out the top 5 purchasers of U.S. scrap.

Turkey is headed for a 2012 repeat as the largest offshore buyer of U.S. ferrous scrap, with nearly 1 million tons purchased in the year's first 2 months. That

Honda Dealers

Collecting

used of batteries

Customers

Honda

Honda products



A cargo ship enters the Bosporus strait in Turkey.

was up more than 60 percent from Turkey's take during the same period in 2011.

Most of the change in the rankings of top purchasers of U.S. scrap is due to Turkey's striking increase in consumption. China's moderating purchases also played a role. In 2010 the country's imports of scrap rose sharply to approximately 15.4 million tons, according to a report from the Organization for Economic Cooperation and Development (OECD), before falling almost as sharply during 2010 to about 6.6 million tons. According to American Metal Market, which uses data from the U.S. Department of Commerce. Last year, Chinese demand for U.S. scrap grew strongly

Disassemblin Scrapping

Rare earth metals

Nickel Cobalt

Japan Metals & Chemicals Co., Ltd.

Calcination

Pulverization Sorting

(Active substances)

usion/Extraction

again – although still behind Turkey's expansion – adding 31.5 percent.

Much of the steel scrap sent to Turkey comes back to the U.S. in the form of end products from Turkish mills. And in 2012, this movement of returning steel products is growing even faster than U.S. exports of scrap metal to Turkey.

'For the first three months reported by the U.S. Department of Commerce, U.S. steel imports from Turkey have increased more than threefold from approximately 152,000 tons in 2011, to 493,000 tons in 2012," according to Thomas Danjczek, president of the Steel Manufacturers Association, a Washington, D.C. trade group of

See TURKEY, Page 4

Honda to recycle hybrid car batteries

Transport

Parts Makers

new parts including batteries

Honda Motor Co., Ltd. and the Japan Metals & Chemicals Co., Ltd. have established a process to extract rare earth metals from various used parts in Honda products, in an actual mass-production process at a recycling plant, not an experimental process. Honda will pursue the recycling of precious resources by utilizing the newly established process for the recycling of rare earth metals.

As part of this effort,

Honda and Japan Metals & Chemicals will begin extracting rare earth metals from used nickel-metal hydride batteries collected from Honda hybrid vehicles at Honda dealers. The new operation will be the first to extract rare earth metals as part of a massproduction process at a recycling plant.

Honda had been applying a heat treatment to used nickel-metal hydride batteries and recycling nickel-containing scrap as a raw material of stainless steel. However, the successful stabilization of the extraction process at the plant of Japan Metals & Chemicals Co., Ltd. made possible the extraction of rare earth metals in a mass-production process with purity as high as that of newly mined and refined metals.

The newly established process enables the extraction of as much as above 80 percent of rare earth metals contained in used nickelmetal hydride batteries. Honda will strive to reuse extracted rare earth metals not only for nickel-metal hydride batteries, but also to a wide range of Honda products.

Honda will further expand the recy-

cling of rare earth metals in the future as the newly established process enables the extraction of rare earth metals from a variety of used parts in addition to nickelmetal hydride batteries.

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Algae technology may help clean up wastewater

OriginOil, Inc., developer of technology to convert algae into renewable crude oil, announced that a breakthrough, chemical-free process developed for algae harvesting may also help clean up the water produced in oil well water flooding and hydraulic fracturing.

Using a lab prototype of the technology, OriginOil researchers have been able to clarify samples of flowback water from a Texas oil well carrying heavy concentrations of dissolved organics, known as frac flowback.

The petroleum industry uses large quantities of water to help fracture or "frac" rock formations deep underground to release more oil and gas. According to the energy industry resource Platts, the global hydraulic fracturing market grew 63 percent – from \$19 billion in 2010 to \$31 billion in 2011 – and is projected to grow a further 19 percent in 2012.

"Our research team has learned that extracting petroleum and contaminants from water is very much like extracting algae," said Riggs Eckelberry, OriginOil CEO. "They are both very hard to remove without using chemicals and heavy machinery. Our chemical-free, high flow and low-energy process holds promise for the billions of gallons of water used daily in the oil and gas industry worldwide."

According to the U.S. Department of Energy, for every barrel of oil produced globally, an average of three barrels of contaminated water is produced. In the U.S., the water to oil ratio (WOR) averages seven barrels of water to one of oil. In the worst cases, the WOR reaches 50 to 1.

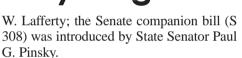
The petroleum must be efficiently reclaimed from this water, and the water itself must be cleaned. Greentech Media reports that energy companies pay between \$3.00 and \$12.00 to dispose of each barrel of produced water, implying a potential world market value between \$300 billion and \$1 trillion per year.

"It seems that in addition to helping create the renewable energy market of the future, we may add value to a massive existing energy market," said Eckelberry. "We will continue to investigate and report on this promising new application of our technology."

Maryland signs recycling bill

Maryland Governor Martin O'Malley signed into law a measure that will increase access to recycling in multifamily dwellings. Under Maryland law, an apartment building or condominium containing more than 10 dwellings is required to have recycling available to residents.

The measure was introduced in the House of Delegates by Delegate Stephen



Increasing recycling access to individuals living in multifamily units directly impacts the recycling rate. In 2010, 58.1 percent of aluminum cans were recycled, the highest recycling rate of any beverage packaging.

AEMP honors 2012 Fleet Masters with awards



AEMP announced the recipients of its 2012 Fleet Masters Award. The U.S. Air Forces, Europe was given the public-sector honor while Waste Management took home the private-sector award. Ron Erwin, chief command, vehicles branch, U.S. Air Forces, Europe accepted the award on behalf of his team. Accepting the honor on behalf of the Waste Management team was John Meese, senior director, heavy equipment disposal operations.

Each year, AEMP acknowledges two outstanding fleets with the honor of Fleet Master, one each in both the public and private sector. In its 9th consecutive year, the Fleet Masters award recognizes equipment professionals who demonstrate excellence in meeting the unique challenges inherent to delivering cost-effective and cutting-edge management of mixed fleets of on-road and off-road equipment.

For the private fleets, Waste Management exemplified the attributes of an AEMP Fleet Master. Waste Management's innovative "Mission to Zero" program has a goal of achieving a zero injury/accident rate company-wide. Since implementation, employee injuries have been reduced 80 percent and vehicle accidents by 70 percent. Additionally, Waste Management boasts an impressive environmental sustainability portfolio. Currently, Waste Management is the largest clean-running fleet in North America. Employing more than 200 environmental technicians, it levers technology with databases and are able to track a multitude of environmental parameters. Waste Management also operates one of the largest facilities in the world that converts landfill gas to diesel. The renewed fuel replaces 2.5 million gallons of diesel, annually, in its fleet. In 2011, Waste Management Heavy Equipment fleet of California earned the Silver-level AEMP Green Fleet certification.



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Extreme Recycling earns certification

environmental organization working to prevent global dumping of toxic wastes, announced that Extreme Recycling, Inc. has achieved its e-Stewards® Certified Recycler designation, placing the company among an elite group of the most responsible e-waste recyclers across the globe. The e-Stewards certification is awarded only to companies that meet the most stringent health and safety, data security, environmental and socially responsible standards in the electronics recycling industry and is the most comprehensive certification available.

BAN's e-Stewards program has garnered global attention by ensuring interna-

The Basel Action Network (BAN), an tional compliance in an effort to protect third-world countries against the rapidly growing problem of imported, hazardous e-waste from flourishing industrialized countries into impoverished nations lacking infrastructure to handle such material.

E-Stewards Recyclers can ensure consumers and businesses that their hazardous electronic waste is truly being recycled in an environmentally friendly manner, rather than being merely dumped, abandoned and forgotten.

Extreme Recycling stated that its Topeka, Kansas facility is the first and only certified e-Stewards electronics processor in the state. The Kansas facility completely disassembles all materials col-

But North American steel industry

members like Danjczek are feeling the

lected from both the California and Kansas sites down to true commodities for reuse in other products.

Unlike many e-waste recyclers, Extreme Recycling can fully assure its customers correct, clean and responsible processing at its very own facility, thereby bolstering the local workforce and economy more so than recyclers that outsource. Extreme Recycling is also dedicated to educating the public about the dangers associated with e-waste through partnerships with school districts, corporate tours, presentations and memberships in a variety of environmental, recycling, sustainability and networking organizations.

undirected free market forces. The flows of ferrous scrap are also being altered by national trade policies, the OECD report found. China, for instance, which exports very little scrap metal, especially in comparison with what it consumes, taxes exports of ferrous scrap at 40 percent, one of the world's highest rates, the OECD noted.

trade with such policies see lower domestic prices, but over time the policies may have to be altered. A country's internal sources for scrap metal are a function of its consumption of metal for domestic products over a period of about 25 years, according to OECD. Investing in steel producing capacity for export purposes, in the expectation of sourcing scrap for mills in other countries, may not be a sustainable policy long term, the OECD analysts warned.

The OECD analysis could use Turkey as its poster child, which is increasing its importation of scrap metal faster than its production of steel. In 2011, American Metal Market reports, the country consumed 30.8 million tonnes (33.9 tons) of scrap, a 22 percent increase from the year before, while producing 34.1 million tonnes (37.6 tons) of steel, up 17.8 percent.

If, in fact, Turkey's consumption of U.S. scrap metals does decline, it will reverse a long-standing trend that, according to the OECD, has seen its scrap imports increase nearly 40 fold since 1985. If recent trends in Turkey's imports of scrap metals are any clue, that trend is not likely

Turkey ■Continued from Page 1

North American steel producers. "This is most certainly a surge.'

For U.S. scrap recyclers, Turkey's enthusiasm for their materials has meant firm pricing support. American Metals market reported in March that prices for heavy melting steel scrap were around \$440 per tonne.



heat from Turkish steel producers who source their raw materials from U.S. recyclers. "It's difficult to understand Turkey's overall steel production costs when they imported over five million tons of scrap from the U.S. last year and had to pay the additional scrap costs associated with handling, freight and inventory charges and then shipped steel products back to the U.S. and again had to pay the additional steel costs for the handling, freight and inventory charges," said Danjczek. "Freight is not free." As Turkey has become a more impor-

tant consumer of U.S. scrap, the country's steel industry has become increasingly reliant on North American sources for recyclable metals. The OECD report said ferrous scrap exports from the U.S. to Turkey in 2002 were just three percent of Turkey's total imports of ferrous scrap. By 2010, U.S. scrap accounted for 26 percent of Turkey's ferrous scrap imports, with most of the more than eight-fold increase occurring from 2004 to 2008.

Much of the explanation for the flow of scrap metal around the world can be found in differences in national infrastructures for recycling metal and producing new products. For instance, the U.S. has nearly 300 shredders producing recycled scrap metal, the OECD report noted. China, meanwhile, has approximately 30 shredders.

However, as observers like Danjczek suggest, there is more going on here than Countries that restrict ferrous scrap

to slow down soon.



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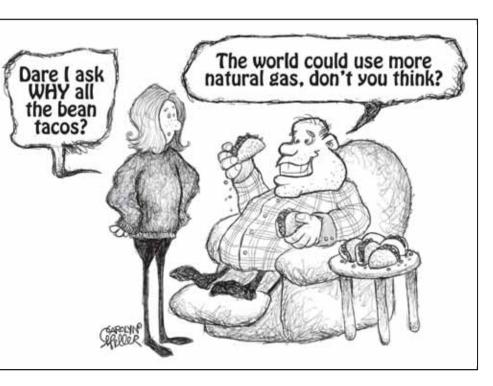
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Montefiore launches system wide sharps recycling program

Montefiore Medical Center, located in New York City, is the first integrated healthcare delivery network in the U.S. to introduce a system-wide recycling program that diverts sharps from the waste stream and recycles the materials for use in new products.

More than 348,500 lbs. of needles and syringes have been collected and processed for recycling since the pilot initiative began last August.

Montefiore has been long recognized for its energy-efficient and environmentally friendly practices, most notably being the first New York City hospital to install a cogeneration system. Built in 1995, the system can generate all of the power for Montefiore's main campus.

The sharps recycling program, known as BD ecoFinity® Life Cycle Solution, was launched at Montefiore in collaboration with Waste Management, Inc., a waste and environmental services company, and BD (Becton, Dickinson and Company), a medical technology company. Before the program was introduced at Montefiore, single-use sharps were collected in designated containers and incinerated off-site. Now, sharps are collected, treated and processed by Waste Management to recover reusable plastic, glass and metal. BD then uses the recycled plastic to make the BD Recykleen[™] Sharps Collectors that are placed throughout Montefiore's three inpatient campuses and nearly 100 ambulatory sites in the Bronx and lower Westchester County.

Borough of State College noted for food recycling program

The U.S. Environmental Protection Agency (EPA) recognized State College Borough for its curbside food recycling program. State College is the only town in the Commonwealth of Pennsylvania conducting curbside food waste collection for composting. The program began as a pilot and is slated to go borough-wide in 2013.

EPA's Food Recovery Challenge encourages organizations to reduce waste, donate and recycle as much of their unspoiled food waste as possible.

State College Borough has a wellestablished yard and garden waste collection and now collects food waste as part of a pilot program which will become borough-wide next year. The food and garden waste is turned into compost, which is used throughout the borough and is also available for purchase. The borough uses and sells approximately 3,000 cu. yds. of compost per year.

Food waste is the largest waste category in the U.S. In 2010, 34 million tons of food waste was generated. Of that, 97 percent was sent to landfills or incinerators. When excess food, leftover food and food scraps are disposed of in a landfill, they decompose rapidly and become a significant source of methane, an extremely potent greenhouse gas which contributes to climate change. Landfills and the food waste in them account for more than 20 percent of all U.S. methane emissions.

Safelite AutoGlass begins national recycling program

12 to 15 million tons saved from landfills

Safelite AutoGlass has begun rolling out a wide-scale windshield recycling program, which expects to result in saving roughly 12 to 15 million tons of material going to landfills every year.

Windshields have not been recycled widely in the past because it is difficult to separate the glass and inner polyvinyl butyral (PBV) plastic layers, but more recycling plants have been developed to make the process more practical. The recycled glass and PVB materials are repurposed for U.S.-manufactured goods, including fiberglass insulation, paint and primer, solar cells, carpet backing and plastic products.

Safelite AutoGlass began rolling out the program in markets near its selected

recycling plant partner at the beginning of 2011 with the implementation in the east coast expected be complete by the end of May. It will then be expanded and rolled out to the west coast.

The logistics of collecting the old windshields and shipping to the recycling plant were designed to be carbon neutral, using existing freight lanes within the supply chain.

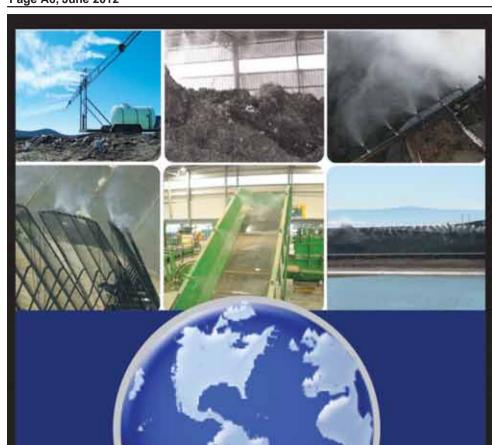
Safelite AutoGlass is committed to its environmental sustainability policy. Currently, Safelite recycles other types of vehicle glass at its manufacturing plant in Enfield, North Carolina. In 2011, more than 5 million tons of glass was recycled out of that location alone.

Michael Deane named 2012 C&D Recycler of the Year

The Construction Materials Recycling Association (CMRA) has named Michael Deane, vice president of sustainability at Turner Construction, as the 2012 C&D Recycler of the Year, the highest honor the association can bestow. He was honored at a special ceremony during the fundraiser for the C&D industry's advocacy arm, the CMRA Issues & Education Fund.

According to the CMRA, Deane has also helped develop an online program to track waste at those sites. In addition, he serves on a number of USGBC committees, including the C&D Recycling subgroup. He understands and supports the recycling of the C&D material generated at the job site, and even though the company is not in the C&D recycling industry, he has worked to provide a common sense approach to developing economically feasible options for recycling throughout North America. It is for these reasons CMRA gave him its annual C&D Recycler of the Year award.





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AFRA launches guide for recycling aircraft materials



Denis Oliver of ELG Metals receives AFRA Accreditation Certificate

The Aircraft Fleet Recycling Association (AFRA) has published its new Best Management Practice (BMP) Guide for the recycling of aircraft materials.

The new guide provides practical solutions for all those working in the field of aircraft parts and materials recycling, and the accompanying AFRA audit and accreditation program assures that the facilities operate in a safe and environmentally responsible fashion, while allowing businesses to find sustainable solutions for themselves and their customers.

Aircraft recyclers represent a growing proportion of AFRA membership; and the new guide will help them capture maximum value from aircraft which have reached the end of revenue service, by increasing the amounts of materials that can be recycled and raising the overall residual value of the high-grade materials used in aircraft manufacturing.

The new guide has been developed by AFRA members whose business span the commercial aircraft life cycle, from original equipment manufacturing, through maintenance, leasing and operations, on to end-of-service disassembly, parts recovery and aircraft materials recycling. The publication collates industry best practice.

Scott Laughlin, vice president of operations at Huron Valley Fritz West, one of the first to be accredited under AFRA's new BMP Guide, said, "We believe AFRA Accredited companies will create improved value propositions and create increased business opportunities in a sector which increasingly appreciates a commitment to environmental best practice."

The new BMP Guide has been incorporated into AFRA's Accreditation program, adding aircraft materials recycling to an already extensive list of retired aircraft management activities that were built into previous versions of the Program. The guide will be used to review and audit a recycler's facilities, procedures and documents, which are assessed and monitored by an independent auditor on an on-going basis.

CABLE SEPARATION GOT YOU PUZZLED?





June 2012, Page A7

RecycleMania hit campuses

The RecycleMania Tournament, which wrapped up its 12th annual competition at the end of March, is an 8-week challenge that ignites classic college rivalries, rallying students, faculty and staff to increase on-campus recycling rates beyond their collegiate competitors.

This year, 92 million lbs. of recyclables and organic materials were recovered, which prevented the release of nearly 150,000 metric tons of carbon dioxide equivalent. This reduction in greenhouse gases is equivalent to the annual emissions from more than 25,840 passenger cars or electricity use of more than nearly 16,406 homes. Equally impressive, the average recycling rate for participating schools increased from 27.61 percent to 28.49 percent over the course of the tournament.

The competition ran from February 5 through March 31. The colleges and universities that took home top prizes in the three primary categories are:

•"Grand Champion" (determined by the percentage of overall waste recycled): American University – (85.16 percent) – Washington, D.C.

•"Per Capita Classic" (determined by total pounds of recyclables collected per person): Union College – (61.79 lbs.) – Schenectady, New York.

•"Waste Minimization" (determined by the lowest overall amount of recyclables and trash per person): Valencia College – (2.79 lbs.) – Orlando, Florida.

To increase student enthusiasm, RecycleMania held its second annual video contest with the theme "The Spirit of Recycling." With the public invited to vote for their favorite from among the 28 videos posted to YouTube, the student submission from Florida State University garnered the most "likes" to win first prize followed by East Tennessee State University. Clemson University's video received the Judges' Award.

"One unique aspect of RecycleMania is that everyone is a competitor," noted Bill Rudy, recycling coordinator at Brigham Young University and chair of RecycleMania, Inc. "No one sits on the sidelines. When students recycle, they add to their score, and if they throw something away, it hurts their school's ranking. With the whole campus in the game, the competitive spirit spreads and recycling increases."

Lynn & Don Roemer

Grant's Pass, Oregon

Cascade Metal Recycling

Owners,

The RecycleMania Tournament is an independent program of RecycleMania, Inc., a nonprofit organization led by recycling managers from participating schools. The competition is made possible with the sponsorship support of the Alcoa Foundation, The Coca-Cola Company, SCA AfH Professional Hygiene, Waste Management, the American Forest & Paper Association and HP. Program management is provided by Keep America Beautiful with additional program support from the EPA's WasteWise program and the College and University Recycling Coalition (CURC).

> For a direct link to the full results, view this article on www.AmericanRecycler.com.

We're buying our 8th piece of Al-jon equipment to help us keep up with growth."

"After working with one 580CL for a year, we learned that having customers set up for a baler increased our production substantially," reports Don.

"Customer demand led to our purchase of a second 580. Even with the efficiency of one machine, we couldn't keep up with requests from new customers. When they discovered how efficient we were, they kept giving us more business. That's why we're buying a third 580," says Don.

"We tried another brand once," explains Lynn. "It cost a fortune for parts. Their service department was horrible and no one was helpful or cared about anything. Needless to say, we gathered our wits, embraced our Al-jon tradition and never looked back."

Over the past 16 years, Cascade has purchased eight Al-jon machines, which helped grow the business. "We never thought we would achieve what we have," states Lynn. "They have always gone over and above to make sure we had what we needed. If we have achieved some measure of success it was, in part, because of our relationship with the folks at Al-jon."

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PAPER

Global Green USA to develop and pilot recyclable produce boxes

Recyclable produce box trials commenced in honor of Earth Day at New Leaf Community Market's flagship store in Santa Cruz, California. The event took place in the heart of a major farming region for leafy greens, which are commonly packed in unrecyclable boxes. The produce was provided by local farm Lakeside Organic Gardens, and the latest in commercially available Fibre Box Association certified recyclable boxes were supplied by members of Global Green USA's Coalition for Resource Recovery (CoRR), Green Bay Packaging and Interstate Container.

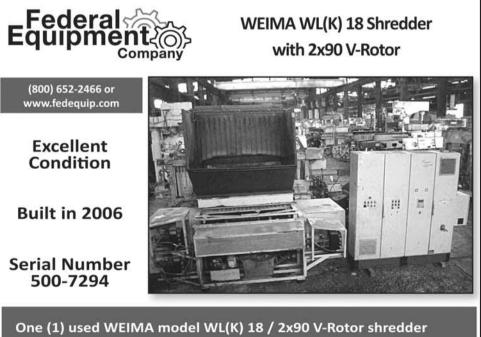
Greens, vegetables, seafood and meats are often transported in paraffincoated cardboard, generating 1.45 million tons of solid waste that must be landfilled or burned. If designed for recycling and recycled, retailers and restaurants could realize a net benefit of combined cost savings and revenue generation of \$200 million nationwide. CoRR has worked since 2008 to accelerate the industry adoption of recyclable alternative coated packaging and recycling it, which could reduce America's annual carbon emissions by 4.5 million mtCO2e, equivalent to eliminating an entire coal-fired power plant.

The recyclable boxes were packed with iceberg lettuce, celery hearts and broccoli at Lakeside Organic Gardens' Watsonville facility. The produce was cooled using a vacuum process, placed



in humid storage, and delivered by truck to New Leaf. There, the boxes were inspected and unpacked, and some of the produce was used to make a fresh salad. As part of this pilot, a more intensive hydro-vacuum cooling process, commonly used to cool produce, was tested on Interstate Container's boxes for the first time with promising results.

Green Bay Packaging and Interstate Container are two of several major manufacturers of recyclable boxes for a vari-



• 2,350 mm (92") long x 1,800 mm (71") wide intake section

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8200 Bessemer Ave. • Cleveland, Ohio 44127 • T (800) 652-2466 www.fedequip.com • deals@fedequip.com ety of wet applications. "Grocers are increasingly aware of the savings from receiving recyclable boxes that can be put into the corrugated stream instead of trashed," said Paul Martin, vice president and general manager at Green Bay Packaging. Jeff Cormier, national sales and marketing manager at Interstate Container, echoed these sentiments. "We want to give farmers a cost-neutral, recyclable box that lets them bring added value to retailers," he said. "Most importantly, the boxes must have the strength needed to protect the produce."

New Leaf Community Market, a local chain of grocery stores with seven locations in the Central Coast region, hosted the event at their flagship store. "We are very excited to help move this effort forward," said Matt Landi, produce manager. "Recyclable boxes have the potential to help us save money on trash fees, and they're better for the environment than non-recyclable, waxcoated boxes."

City representatives including Santa Cruz Mayor Don Lane and Lowell Hurst, Council Member and former Mayor of Watsonville, attended the event.

According to Annie White of Global Green USA and director of CoRR, "Global Green has had great success in working with leaders in the poultry industry to transition to recyclable boxes. This demonstration is our first step toward developing solutions for the produce industry."

A new bride was a bit embarrassed to be known as a honeymooner. So when she and her husband pulled up to the hotel, she asked him if there was any way that they could make it appear that they had been married a long time.

He responded, "Sure. You carry the suitcases!"

Naval air station wins paper recycling award

The American Forest & Paper Association (AF&PA) 2012 Community Recycling Award was presented to Naval Air Station (NAS) Whidbey Island in Oak Harbor, Washington.

The presentation was made as part of NAS Whidbey Island's "Countdown to Earth Day Kickoff" event. The program stood out from more than 200 applications from 42 states as a result of successfully recovering 2,664,000 lbs. of paper and paper-based packaging in 2011, averaging 222 lbs. per person.

The award-winning program was started in 1990 as part of a larger effort to meet changes in the overall way business was conducted at Navy bases across the globe, and in the past 5 years, more than 7,300 tons of paper has been recovered for recycling. Program administrators credit their results to annual educational opportunities, community events and the sharing of best practices through publications, meetings and personal interactions.

AF&PA recently announced a record-high paper recovery rate of 66.8 percent of paper consumed in the U.S. in 2011. Programs such as the one at NAS Whidbey Island combined with the recycling efforts of millions of Americans each day will help drive the industry toward its goal to exceed 70 percent paper recovery for recycling by 2020.

U.S. recovered paper consumption at 66.8 percent

According to the 2011 Audit of Recovered Paper data published by the American Forest & Paper Association (AF&PA), total U.S. industry consumption of recovered paper in 2011 was 30,508 thousand short tons.

Consumption of corrugated was 63.4 percent of the total, followed by mixed papers (12.9 percent), newspapers (11.3 percent), high grade deinking (8.4 percent) and pulp substitutes (3.9 percent).

AF&PA also released its 2012 Annual Statistical Summary of Recovered Paper Utilization with data from 2002 to 2011. The report shows detailed historical recovered paper consumption figures by U.S. region and end use, as well as utilization by paper and paperboard grades. It also features detailed historical exports of U.S. recovered paper by destination and port of embarkation from the U.S. Bureau of the Census. According to the 2011 figures, U.S. exports of recovered paper were 23,179 thousand short tons.

The total amount of paper recovered for recycling in the U.S. in 2011 was 52,767 thousand short tons, representing a 66.8 percent recovery rate.

WASTE

Analysts lower industry outlook to ''stable''

Rating agency Moody's Investors Service is slightly less optimistic about the waste industry having reduced its outlook from "positive" to "stable" in its latest analysis.

"The slow economic improvement has failed to generate meaningful growth in waste volumes, and the pricing discipline maintained by waste operators during the recession is beginning to fade," said Moody's analyst Bruce Herskovics in a statement. "We're hearing that customers, particularly cash-strapped municipalities, are pushing back when contracts come up for renewal and we believe that operators are bidding more defensively to maintain accounts."

Moody's said pricing concessions will lessen the impact of inflation-based escalators that appear in many waste hauling contracts and that C&D waste volumes are not likely to rebound this year. "However, industrial and commercial waste segments have shown firmer trends, aided by better industrial production and retail sales," Moody's added. Also dragging waste volumes are fuel prices and "a longdeveloping shift in consumer preference for recycling and re-use over landfill disposal."

There are three ways to get things done: do it yourself, hire someone to do it, or tell your kids not to do it.

Waste industry professionals honored

More than two dozen men and women in the solid waste industry were honored for their service to the field at a special awards ceremony sponsored by the Environmental Industry Associations (EIA) – the National Solid Wastes Management Association (NSWMA) and the Waste Equipment Technology Association (WASTEC).

"We are honored to recognize these remarkable individuals," said Bruce Parker, president and CEO of EIA and NSWMA. "These committed professionals have demonstrated outstanding achievements in advancing the reputation of our industry as environmentally and technologically innovative, safety conscious and service oriented."

EIA Driver of the Year

•Jesus Pena, Republic Services, Inc. (North Las Vegas, Nevada) – Large Commercial Category

•Brett Popke, Allied Waste of Sandusky (Sandusky, Ohio) – Large Industrial Category

•Mike Buczkowski, Republic Services, Inc. (Sylvania, Ohio) – Large Residential Category

•Saul Lopez, Salt Lake County Sanitation (Utah) – Public Sector Category

•Jamie Montague, Rogue Disposal and Recycling, Inc. (Central Point, Oregon) – Small Commercial Category

•Ralph Smith, Forest Green Waste Services (Cincinnati, Oregon) – Small Residential Category •Tony Milner, Rogue Disposal and Recycling, Inc. (Central Point, Oregon.) – Small Industrial Category

EIA Hall of Fame •Lee Brandsma, Groot Industries

(Elk Grove Village, Illinois)•Susan Eppes, EST Solutions, Inc.(Houston, Texas)

•George Fennell, Carolina Waste & Recycling LLC (North Charleston, South Carolina)

•Dwight Schaubach, Bay Disposal & Recycling, Inc. (Norfolk, Virginia)

•Stephen Smith, Clean Energy Renewable Fuels (Seal Beach, California)

•Bruce Parker, Environmental Industry Associations (Washington, D.C.)

EIA Special Trustee Award

•Jim O'Connor, CEO, Republic

Services, Inc. (Phoenix, Arizona) NSWMA Distinguished Service

Award •Ken Binnix, Days Cove Reclama-

tion Co. (Annapolis, Maryland) •Robert Eisenbud, Waste Management, Inc. (posthumously, Washington,

D.C.) •B.J. Harvey, E.L. Harvey & Sons, Inc. (Westborough, Massachusetts)

NSWMA Member of the Year Award

•Tom Brown, IESI Corporation, a Progressive Waste Solutions Company (Fort Worth, Texas) NSWMA Special Governor's Award

•Kenneth Burkett, American Waste Control, Inc. (Tulsa, Oklahoma)

•Jeff Crate, Draper Aden Associates (Blacksburg, Virginia)

•Robert Lee, Eco-Tech Environmental, LLC (Louisville, Kentucky)

•Andy Moss, Progressive Waste Solutions (Lyndhurst, New Jersey).

•Fred Radandt, Manitowoc Disposal and Recycling (Manitowoc, Wisconsin)

•George Wayne, Waste Connections, Inc. (El Paso, Texas)

WASTEC Distinguished Service Award

•Sean O'Brian, O'Brian Tarping Systems (Wilson, North Carolina)

•Craig Williams, Labrie Environmental Group (Madison, Wisconsin)

WASTEC Employee of the Year

•For Production: Mike Goodman, The Curotto Can (Sonoma, California)

•For Sales and Marketing: L.T. Beale, Otto Environmental Systems North America, Inc. (Charlotte, North Carolina)

•For Engineering: James Robbins, Marathon Equipment Co. (Vernon, Alabama)

WASTEC Member of the Year Award

•George Fink, Volvo Construction Equipment (Asheville, North Carolina)

—William J. Clinton

There is nothing wrong with America that cannot be cured by what is right with America.

<image><text><text><text><text><text>

WASTE GHG emissions continue to fall for solid waste industry

gas inventory released by the U.S. Environmental Protection Agency (EPA) in April 2012, the waste management services industry generated only 1.8 percent of the total anthropogenic greenhouse gases in the United States. The National Solid Wastes Management Association (NSWMA), the association that represents for-profit companies in the U.S. that provide solid waste collection, recycling and disposal services, commented that this EPA report demonstrates the significant progress made by the solid waste services industry.

While anthropogenic methane emissions from natural gas systems and enteric fermentation have increased since 1990, emissions from landfills have decreased to 16.2 percent as a result of greater use of

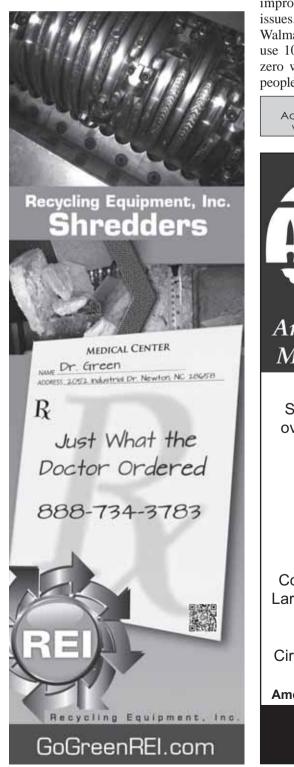
According to the latest greenhouse gas collection and destruction equipment. inventory released by the U.S. Envinental Protection Agency (EPA) in 1 2012, the waste management servsystems.

> "Our industry expects to continue reducing greenhouse gas emissions in the future, as additional investments are made to capture and destroy landfill gas," said NSWMA president and CEO Bruce J. Parker.

The gases generated from landfills, composting and incineration were approximately 124 million tons of carbon dioxide equivalent (CO2Eq). Municipal solid waste and industrial waste landfills reduced their total anthropogenic methane emissions by more than 27 percent since 1990, from 148 million tons of CO2Eq in 1990 to 108 million tons CO2Eq in 2010.

Walmart to end landfill waste by 2025

Walmart released its fifth annual Global Responsibility Report (GRR) entitled "Beyond 50 Years: Building a Sustain-



able Future," highlighting Walmart's global top 10 list of achievements to reduce its impact on the environment, improve efficiency and address social issues. The new GRR unveils data against Walmart's 3 primary sustainability goals to use 100 percent renewable energy, create zero waste and sell products that sustain people and the environment.

For a list of Walmart's Top 10 Achievements, view this article on www.AmericanRecycler.com.



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ELECTRONICS

Governor Hickenlooper signs electronic recycling jobs act

In celebration of Earth Day, Colorado Governor John Hickenlooper signed the Electronic Recycling Jobs Act (SB 1322) into law. He was joined by a coalition of Colorado small businesses, members of the recycling industry, conservation groups and nonprofit organizations. The legislation encourages the recycling of electronic waste, creates thousands of new jobs and will prevent disposal of harmful chemicals in Colorado landfills.

"The bipartisan Electronic Waste Recycling Jobs Act is an incredible winwin-win for Colorado. It will increase the amount of electronic waste that is recycled in the state, create jobs, return valuable metals found in electronics back into manufacturing and provide for a cleaner and more sustainable Colorado," said Governor Hickenlooper.

The Act moved through the Colorado Legislature by a bipartisan and diverse coalition including the Act's sponsors, Senator Gail Schwartz (D-Snowmass Village) and Rep. Don Coram (R-Montrose) and partners including, Colorado Association for Recycling, Colorado Environmental Coalition, Colorado Counties, Inc. and Goodwill Industries.

Colorado joins 17 other states that also have passed laws to address the emerging problem of electronic waste in landfills. Electronic products from televisions and computers contain large quantities of valuable materials such as gold, silver, copper and aluminum. By currently land filling the precious metals, residents are literally throwing away resources which could be used for manufacturing. Instead of losing these materials, this legislation prevents large screen electronics from being placed in landfills in the first place. Importantly, it leaves the specific solutions to the electronic waste to the free market.

"As we've seen in other states, electronic waste legislation will help strengthen electronic recycling in Colorado allowing us to create potentially thousands of jobs," stated Marjorie Griek, executive director, Colorado Association for Recycling. "This type of legislation can serve as a successful model for keeping toxic materials out of the waste stream while recovering valuable resources for reuse by Colorado businesses and protect the environment."

Colorado is currently throwing away up to 161,000 tons of electronic waste per year and only recycling on average 8,000 tons. For every 10,000 tons of electronic waste recycled, at least 130 jobs are created with the possibility of twice that many. A ban has the potential to create 2,500 jobs.

Electronic devices also contain large amounts of toxic metals, allowing a staggering amount of toxins to enter landfills each year, threatening Colorado's air, water and land. In fact, despite only amounting to 2 percent of our trash by volume, discarded electronics account for a shockingly disproportionate 70 percent of the heavy metals in landfills.

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ELECTRONICS 7,800 pounds of batteries collected for recycling

A battery-recycling project funded by a grant from CalRecycle has collected more than 7,800 lbs. of batteries since January 2011.

Over the duration of the project, organized by San Gabriel Council of Governments (SGVCOG), 40 local businesses served as battery take-back sites for communities across the San Gabriel Valley, California.



Heidi Sanborn, executive director of California Product Stewardship Council, instructs Monrovia city council member, Becky Shelvin, to place used household batteries into recycling box at Digitech Camera Repair in Monrovia as store owner, John Berberian looks on.

Although the grant ended March 31, Call2Recycle and the SGVCOG will continue to support these businesses in order to allow them to remain battery take-back sites. Call2Recycle will provide the collection boxes, shipping expenses and recycling at no cost to the sites and the SGVCOG will provide technical assistance as well as promoting awareness.

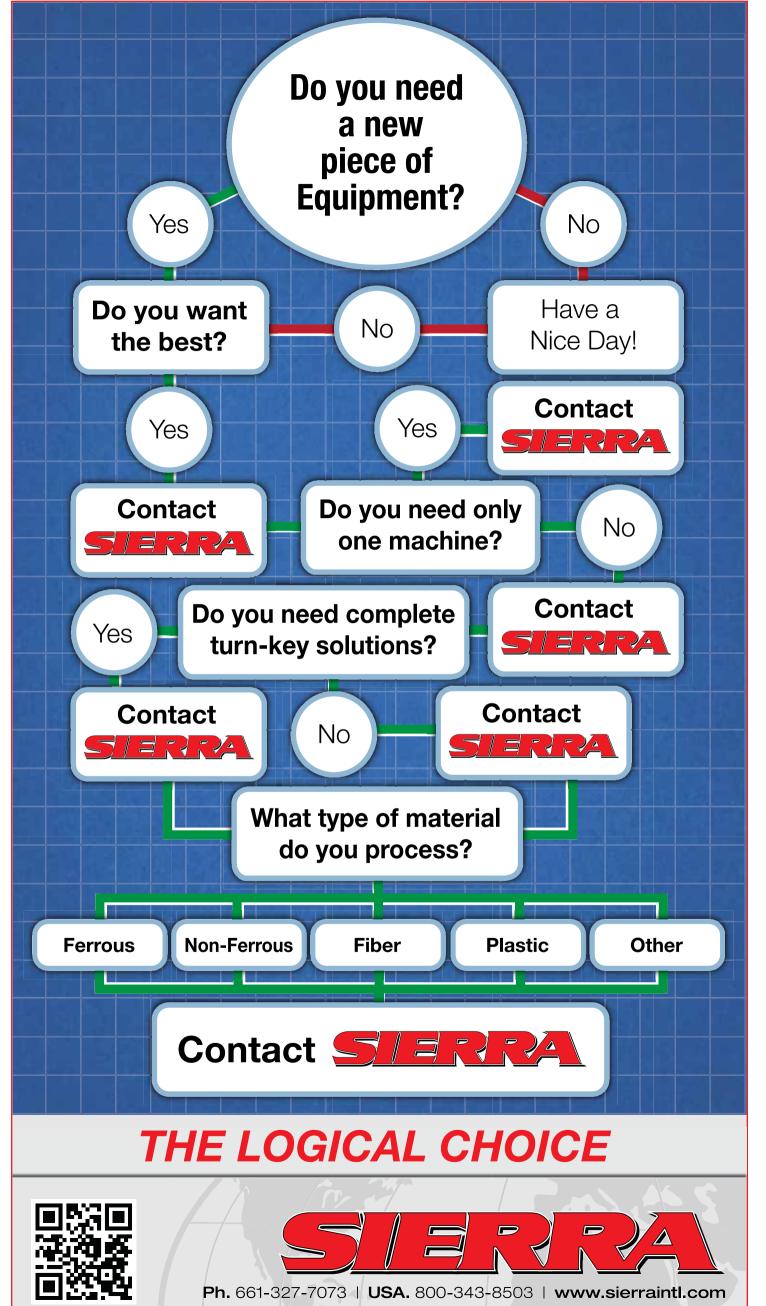
Project findings provide useful data to inform the national efforts to develop a producer-funded alkaline battery-recycling program. In 2010, this project conducted focus groups to determine public awareness in the San Gabriel Valley regarding hazardous waste product disposal and California law. Findings indicated that 59 percent of those surveyed were aware of the disposal ban on batteries – but 56 percent still threw them in the trash.

"We wanted to inform the community as to why throwing products like batteries and fluorescent lamps in the trash is illegal in addition to providing them with convenient recycling opportunities," said Heidi Sanborn, executive director of the California Product Stewardship Council, the major project partner supporting the SGVCOG.

The real key to the project's success are the 40 local businesses that serve as take-back locations as well as the public that participated and brought their batteries to these collection sites. This approach rewards the sites for their commitment to environmental stewardship – a "vote with your dollars" free market approach.

Household batteries and fluorescent lamps were banned from trash disposal in 2006. All household batteries under 11 pounds can be recycled at any of the takeback locations.

To support lamp recycling the project also co-sponsored a two day lamp recycling event and provided information about permanent collection sites.



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1994 MetPro 74 x 104 Auto Shredder

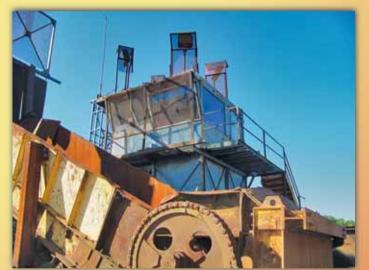
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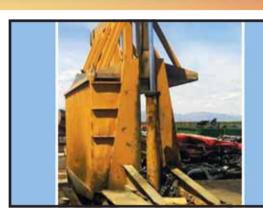
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2006 AL-JON 400 XL METAL BALER 7,600 hours. Good condition and immediately available. \$225,000



2009 EZ A+ CAR CRUSHER 6 cyl. John Deere with 7,700 hours. Automation. Crusher is well maintained and is ready to go to work \$98,000



1997 DAEWOO 280LC WITH SHEAREquipped with Vibra-Ram shear. 5,800 hours, works every day.Immediately available.\$97,500



RICE LAKE WEIGHING SYSTEM ATV 2012 & ATV 1012 portable Scale with weight display and printer. 30' total of portable scale. \$25,000

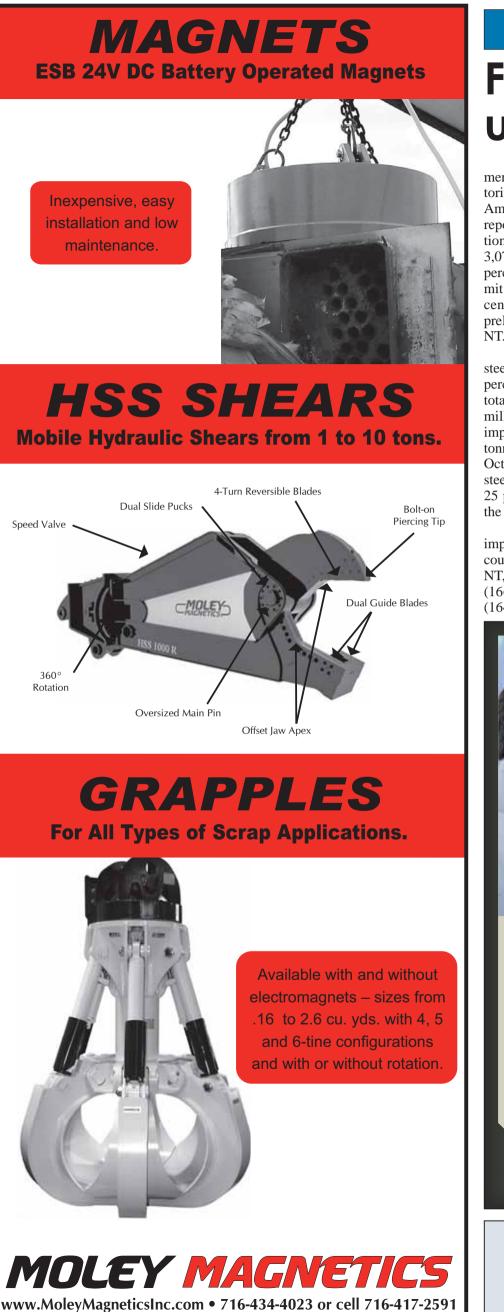




1995 HARRIS ABS 550 SEE IT RUNNING. Spare parts 19,000 hours.

\$165,000

Page A14, June 2012



METALS Finished steel imports up 11 percent in April

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 April totaled 3,074,000 net tons (NT). This was a 5 percent decrease from the 3,248,000 permit tons recorded in March and a 6 percent increase from the March preliminary imports total of 2,899,000 NT.

Import permit tonnage for finished steel in April was 2,394,000 NT, up 11 percent from the preliminary imports total of 2,163,000 NT in March. The 2.4 million permit tons of finished steel imports in April was the highest monthly tonnage figure in over 3.5 years (since October 2008). The estimated finished steel import market share in April rose to 25 percent, which is the highest level in the last 9 months.

In April, the largest finished steel import permit applications for offshore countries were for South Korea (335,000 NT, up 23 percent from March), Japan (166,000 NT, down 7 percent), China (164,000 NT, up 57 percent), Russia (148,000 NT, up 358 percent) and Turkey (121,000 NT, down 26 percent). For the first 4 months of 2012, the largest offshore suppliers were South Korea (1,260,000 NT, up 32 percent from the same period in 2011), Japan (653,000 NT, up 35 percent) and Turkey (634,000 NT, up 133 percent).

Finished steel import permits for products that registered large increases in April versus the March preliminary include plates in coils (up 134 percent), sheets and strip all other metallic coated (up 48 percent), hot rolled sheets (up 43 percent), sheets and strip galvanized hot dipped (up 37 percent) and hot rolled bars (up 26 percent). Major products with significant year-to-date (YTD) increases versus the same period in 2011 include plates in coils (up 66 percent), cut length plates (up 63 percent) and reinforcing bar (up 54 percent). Notable YTD import increases in products from offshore countries include plate in coils from Russia (111,000 tons, up 1,501 percent), reinforcing bar from Turkey (195,000 tons, up 135 percent) and cut length plates from Korea (65,000 tonnage, up 538 percent).



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METALS Worldwatch Institute: Global metals production recovers

The global production of key metals increased more than 14 percent in 2010 marking a robust recovery from the sharp decline spurred by the 2009 global recession. Production totaled 1.48 billion tons in 2010, the last year for which data are available, according to research conducted for the Worldwatch Institute's Vital Signs project. The increase marks a return to the rise in metals production, driven in part by the rapid economic expansion of newly prosperous developing countries such as China, India and Brazil.

The 14.3 percent surge in production was driven not only by common metals such as aluminum, arsenic, cadmium, chromium, copper, gold, lead, mercury, nickel and steel, but also by more obscure but emerging metals. "Dozens of metals show strong growth as more countries industrialize," said report author Gary Gardner, a senior fellow at Worldwatch. "And increasingly complex products require materials that are not heard about in daily conversation – from hafnium used in nuclear reactors to rhenium, a key metal in jet engines.

"While steel production declined sharply in advanced industrial regions during the 2007-09 recession, it continued its longtime increase in Asia, driven in particular by ongoing strong growth in China," said Gardner. "Steel production in China has quadrupled in the past decade."

Not surprisingly, per capita metal consumption is closely correlated with per capita gross domestic product (GDP). According to the U.S. Geological Survey, countries with per capita GDPs of under \$5,000 consume less than 5 kilograms of aluminum per person, whereas those with GDPs exceed-

The global production of key metals eased more than 14 percent in 2010 king a robust recovery from the p decline spurred by the 2009 global ssion. Production totaled 1.48 biltons in 2010, the last year for which are available, according to research ing \$25,000 consume 15 to 35 kilograms per person. Wealthier countries also have greater levels of stocks in use – in buildings, vehicles and myriad other economic outputs – than developing countries, often by a factor of 3 to 10, wrote Gardner.

> "Metals, of course, are a non-renewable resource," noted Worldwatch president Robert Engelman. "A rise in production that matches economic growth is a key indicator of the global economy's unsustainability. Ultimately, recovery and recycling will have to dominate metals supply, because mining and production cannot do so indefinitely."

> Progress on metals conservation is slow, however. According to the United Nations Environment Programme's International Resource Panel, the share of discarded metal that is recycled – known as the "end-of-life recycling rate" – is above 50 percent for only 18 of 60 metals surveyed. "Higher recycling rates tend to be associated with materials that are used in large amounts in easily recoverable applications, such as car manufacturing," said Gardner. "Metals with lower rates of recovery are often used in small quantities in complex products, such as electronics."

> The pattern of metal use varies between developing and industrialized countries. Developing countries generate less aluminum scrap from recycling in the early decades of development than in the mature stages of their economic growth.

> Future policy decisions will need to support the creation of a circular economy that reuses and recycles materials and that remanufactures products to the extent possible. Germany, Japan, and China are countries already making a circular economy a priority.

CR Scrap Metals MarketWatch							
Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	
#1 Bushelings	per gross ton	\$335.00	\$326.00	\$361.00	\$367.00	\$420.00	
#1 Bundles	per gross ton	336.00	330.00	358.00	369.00	398.00	
Plate and Structural	per gross ton	356.00	340.00	349.00	372.00	442.00	
#1 & 2 Mixed Steel	per gross ton	350.00	337.00	352.00	357.00	400.00	
Shredder Bundles (tin)	per gross ton	298.00	272.00	294.00	302.00	345.00	
Crushed Auto Bodies	per gross ton	292.00	280.00	280.00	305.00	350.00	
Steel Turnings	per gross ton	205.00	189.00	210.00	200.00	311.00	
#1 Copper	per pound	2.91	3.10	3.20	3.31	3.49	
#2 Copper	per pound	2.84	3.00	3.14	3.20	3.35	
Aluminum Cans	per pound	.55	.64	.75	.74	.77	
Auto Radiators	per pound	1.80	1.81	2.10	2.15	2.20	
Aluminum Core Radiators	per pound	.61	.62	.63	.72	.72	
Heater Cores	per pound	1.59	1.64	1.70	1.68	1.80	

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

.62

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Stainless Steel

.64

.80

.82

.80

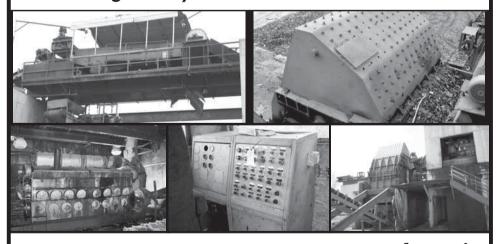


1994 Texas Shredder 74 x 104



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 Undermill Oscillator
- Picking Station
 60" Drum Magnet
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METALS

Gerdau's chief named 2012 **AIST Steelmaker Of The Year**

executive officer of Gerdau, was named "Steelmaker of the Year" at AISTech 2012. The Steelmaker of the Year Award is presented annually by AIST to recognize notable leaders for their contributions to the steel industry.

Johannpeter was being recognized for his entrepreneurial spirit, visionary leadership, support of research and steadfast commitment to improving the steel industry and the global supply of steel products.

Johannpeter has been chief executive officer of Gerdau since January 2007. Johannpeter's 30 years of experi-

André B. Gerdau Johannpeter, chief ence at Gerdau include roles as the global head of the marketing and sales, metallics, procurement, logistics, human resources and organizational development departments. Before that, he was the executive vice president in the executive committee and chief operating officer of Gerdau North America.

> Currently, André B. Gerdau Johannpeter is chairman of the board of the Brazil Steel Institute (IABr), director of the executive committee of the Latin American Steel Association (Alacero) and member of the executive committee of the World Steel Association.

Salvaging Millions by Ron Sturgeon

Autosalvageconsultant.com

What your web designer doesn't know costs you

Most web designers have a basic idea about business, but they don't know much about your business. They don't know what's important to your customers. If your site is going to be successful, you need to make sure that the people building it understand your business and know exactly why people come to your site.

Why are you here?

Check out a few auto recyclers' websites. Why do you think visitors came to these sites? To buy a part, right? How prominent is the searchfor-parts box on the home page? Is it even on the homepage?

Too often I have had to click around looking for the tool that 98 percent of people visiting the site have come to use.

If you don't make it simple for potential customers to do what they came to do, they will click to the next site. Money that should have been yours is gone forever because your designer didn't think hard enough about why people come to your site and what they need to do there.

Connecting site design and business goals

Going beyond the basics, the smartest web designers will think about how the business works and what could be on the site to make transactions happen.

All recyclers sell used parts on their websites. Right now, however, the smartest auto recyclers are using their websites to buy cars.

Just by putting the offer to buy on the site, they get the occasional juicy bit of inventory at a bargain price. Your web designer likely won't even think about strategies like that one unless he or she takes the time to understand your business.

Getting the most from your business website

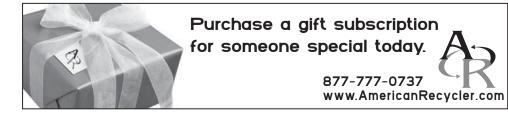
I don't design or sell web design services, but I frequently host calls with entrepreneurs and their web designers and developers to set clear expectations for web design projects, reconcile the unique selling proposition with the website, and verify the SEO capabilities of the designer.

Because I have been through the web design process for many of my ventures, I can help you get the best work from your web design team and increase your chances of getting a site that uses SEO best practices and contributes substantially to your bottom line.

If your website could produce more sales, e-mail me your site address and I will give you a free report showing your site's SEO score and giving you some specific ways to make your site work harder for your business.

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.



Nucor reports quarterly results

Nucor Corporation reported consolidated net earnings of \$145.1 million, or \$0.46 per diluted share, for the first quarter of 2012. Diluted earnings per share of \$0.46 for the first quarter are greater than their guidance range of \$0.30 to \$0.35 per share due primarily to actual March shipments to outside customers in the steel mills segment exceeding the expectations included in earnings guidance.

Nucor's consolidated net sales increased 5 percent to \$5.07 billion compared with \$4.83 billion in the first quarter of 2011 due to a 6 percent increase in average sales price per ton partially offset by a 1 percent decrease in total tons shipped to outside customers. Consolidated net sales increased 5 percent compared with \$4.83 billion in the fourth quarter of 2011 due to a 1 percent increase in average sales price per ton and a 4 percent increase in total tons shipped to outside customers. First quarter downstream steel products shipments to outside customers increased 3 percent over the first quarter of 2011 and decreased 3 percent from the fourth quarter of 2011.



The average scrap and scrap substitute cost per ton used during the first quarter of 2012 was \$445, up 5 percent over \$424 in the first quarter of 2011.

Overall operating rates at the steel mills remained relatively flat at approximately 79 percent in the first quarter of 2012 as compared to 80 percent in the first quarter of 2011, but increased from 71 percent in the fourth quarter of 2011.

Construction is ongoing on the 2,500,000 ton DRI facility in Louisiana and is on schedule for completion and beginning of start-up in mid-2013.

During the first quarter of 2012, the David J. Joseph Company, through its wholly owned subsidiaries, acquired three metal recycling companies. These acquisitions will provide an estimated additional annual capacity of 275,000 tons.

In February, Nucor's board declared a cash dividend of \$0.365 per share payable on May 11, 2012 to stockholders of record on March 30, 2012. This dividend is Nucor's 156th consecutive quarterly cash dividend.

Nucor acquires Skyline Steel

Nucor Corporation has signed a stock purchase agreement to acquire the membership interests of Skyline Steel LLC and its subsidiaries from ArcelorMittal, for approximately \$605 million. Skyline Steel will be a wholly owned subsidiary of Nucor Corporation and will maintain its headquarters in Parsippany, New Jersey.

Skyline Steel LLC is a steel foundation distributor serving the U.S., Canada, Mexico and the Caribbean. Skyline distributes high quality products to service the most challenging applications including marine construction, bridge and highconstruction, heavy way civil construction, storm protection, underground commercial parking, and environment containment projects in the infrastructure and construction industries.

Nucor anticipates that this transaction will close promptly after the satisfaction of all closing conditions and the receipt of required regulatory approvals.

Timken large bar quality increases

The Timken Company announced the completion of its ultrasonic test (UT) inspection line at the company's Faircrest Steel Plant in Canton, Ohio. This \$5 million investment increases Timken large bar finishing capacity and helps ensure large bar sound-center quality.

This cutting-edge inspection line allows full body inspection for bar diameters ranging from 6" to 24" and for lengths up to 35'. The line allows for the inspection of the internal volume and the surface of bar products for defects. It also helps characterize the "center soundness" of bars.

Timken expects the press to begin operation in early 2013 and expand its product capabilities to meet ultrasonic specifications that are even more demanding while reducing the cycle time for larger products.

AUTOMOTIVE

EPA to allow a percentage of renewable fuel in gasoline

The U.S. Environmental Protection Agency (EPA) approved the first applications for registration of ethanol for use in making gasoline that contains up to 15 percent ethanol – known as E15. Ethanol is a renewable fuel that can be mixed with gasoline. For over 30 years ethanol has been blended into gasoline, but the law limited it to 10 percent by volume for use in gasoline-fueled vehicles. Registration of ethanol to make E15 is a significant step toward its production, sale, and use in model year 2001 and newer gasoline-fueled cars and light trucks.

To enable widespread use of E15, the Obama Administration has set a goal to help fueling station owners install 10,000 blender pumps over the next 5 years. In addition, both through the Recovery Act and the 2008 Farm Bill, the U.S. Department of Energy (DOE) and U.S. Department of Agriculture have provided grants, loans and loan guarantees to spur American ingenuity on the next generation of biofuels.

This action followed an extensive technical review required by law. Registration is a prerequisite to introducing E15 into the marketplace. Before it can be sold, manufactures must first take additional measures to help ensure retail stations and other gasoline distributors understand and implement labeling rules and other E15-related requirements. EPA is not requiring the use or sale of E15.

Ethanol is considered a renewable fuel because it is generally produced from plant products or wastes. Ethanol is blended with gasoline for use in most areas across the country. After extensive vehicle testing by DOE and other organizations, EPA issued two partial waivers raising the allowable ethanol volume to 15 percent.

E15 is not permitted for use in motor vehicles built prior to 2001 model year and in off-road vehicles and equipment. Gas pumps dispensing E15 will be clearly labeled so consumers can make the right choice.

Ford Fusion customers can support ecocharities and recycle plastic bottles

Ford Fusion hybrid customers can donate to the charity of their choice through the Repreve[®] Gives Back program and help recycle 2 million plastic bottles into the innovative seat fabric of the car in the first model year alone.

Unifi's Repreve brand of recycled fibers are used in the all-new 2013 Fusion Hybrid, Fusion Energi plug-in hybrid and 2012 Ford Focus Electric.

Customers who buy the new 2013 Ford Fusion Hybrid, Fusion Energi plug-in hybrid or Focus Electric can automatically give back to eco-charities while helping save fuel and landfill-destined plastic water bottles.

Through the Repreve[®] Gives Back program, a portion of Repreve sales are donated to one of four environmental nonprofit organizations. The charitable program is offered by Unifi Inc., supplier of the Repreve-branded recycled fiber being used in the seat fabric of the new Fusion hybrids and 2012 Focus Electric.

"Repreve Gives Back is a natural fit for Fusion hybrid customers who already are contributing to a better world by saving fuel while driving and keeping water bottles from landfills," said Carol Kordich, Ford's lead designer of sustainable materials.

The four environmental nonprofits that customers can designate are:

•Keep America Beautiful – creates a cleaner, greener America, from national parks to community gardens and every-where in between;

•Conservation Alliance – protects North America's last wild places by supporting conservation work at the local level;

•American Rivers – protects and restores America's rivers and the full variety of life they sustain; or,

•Rocky Mountain Institute – an organization working to accelerate the profitable transition from fossil fuels to efficiency and renewables.

Through the Repreve Gives Back program, Ford customers and supporters can help determine how the funds will be distributed among the four nonprofits. To vote, customers must "like" Repreve on Facebook and click the "Gives Back" tab to get a passcode. At www.repreve.com, customers can vote for their favorite environmental cause and learn more about the authentic recycled fiber of choice, Repreve.

"We are excited to continue to work with Ford on integrating the Repreve product into new vehicles, like the Fusion. It is important to align with companies that share the same vision and strategy around recycling. A core part of the Repreve brand is generating awareness around the importance of

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recycling, helping to increase the U.S. recycling rates and giving back through our Repreve Gives Back program," said Roger Berrier, president and COO of Unifi. "Unifi's Repreve Gives Back program helps to create the consumer connection between recycling and environmental sustainability."

Repreve is made from a hybrid blend of post-industrial and post-consumer waste. Each Focus Electric seating interior contains the equivalent of about 22 recycled plastic bottles made of polyethylene terephthalate (PET) – the technical name of the plastic of which the bottles are made – while Fusion hybrids feature nearly 42.

In addition to recycling waste that otherwise could have ended up in landfills, Repreve reduces energy consumption by offsetting the need to use newly refined crude oil. Repreve fiber meets all Ford design and comfort requirements to help ensure the Fusion hybrids and Focus Electric meet the company's high performance standards.

Unifi and Ford also are working together to set up plastic bottle collection points within Ford facilities in Michigan and California – bottles that could be part of the more than 2 million plastic bottles that will be recycled into Repreve for fabrics in the Fusion and Focus Electric in their first model years.

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The toilets at a local police station have been stolen. Police said they have nothing to go on.

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Auto financial services recognize Manheim and ADESA with awards

Toyota and Lexus Financial Services has awarded its 2011 Premier Auction Award to nine auction sites.

The 2011 Lexus award winners are ADESA Los Angeles, ADESA Dallas, Manheim Phoenix, Manheim San Francisco Bay, Manheim Milwaukee and Manheim Orlando.

The 2011 Toyota award winners are: ADESA Lexington, Manheim San Francisco Bay, Manheim Phoenix, Manheim Kansas City, Manheim Milwaukee and Manheim Seattle.



BUSINESS BRIEFS

Navistar acquires certain assets of E-Z Pack

■ E-Z Pack Manufacturing announced that certain assets, including intellectual property, of the company are being acquired by Navistar, Inc. Terms of the transaction were not disclosed.

E-Z Pack president Greg Podell said he expects E-Z Pack to continue to operate in a normal business manner throughout a transition period. "We will continue to build, market, sell and support our traditional chassis-agnostic product lines, including our full line of quality Hercules front loaders and automated side loaders, and our Goliath rear loaders. We will also support the integrated cab-chassis-body product line from Navistar."

Podell noted that the E-Z Pack manufacturing plant in Cynthiana, Kentucky, will continue building and mounting refuse truck bodies on all chassis by original equipment manufacturers throughout the transition period.

East names Benton as refuse product manager

■ Charlie Benton was recently named product manager for refuse equipment at East Manufacturing. In his new position, Benton will be responsible for customer sales and dealer support activities for East's complete line of aluminum transfer trailers.

Benton has served as southeast regional manager for East for 20 years. He also worked for Gainesville Truck Center in Gainesville, Georgia.

Bieller named VP of business development for Atlas

■ Brian Bieller has accepted the position of vice president of business development at Atlas Copco Construction Equipment. In his new role, Bieller will be part of the management team and will report directly to Erik Sparby, president and general manager for Atlas Copco Construction Equipment.

Most recently Bieller was the sales manager for Atlas Copco Rental, responsible for Canada and the western United States. Before going to Atlas Copco's rental division, Bieller had served as vice president of sales and marketing for compaction products at Dynapac USA, an Atlas Copco company.

JMC Steel Group acquires Lakeside Steel

■ JMC Steel Group Inc. has completed its acquisition of Lakeside Steel Inc.

Pursuant to the arrangement under the Business Corporations Act (Ontario), JMC, through a wholly owned subsidiary, acquired all of the issued and outstanding common shares of Lakeside at a price of CAD \$0.2983 per share in cash.

The new North American JMC division will be named Energex Tube.

As a result of the acquisition, JMC will assume responsibility for Lakeside Steel, including its former headquarters and plant operations in Welland, Ontario; operating facilities in Thomasville, Alabama, and Corpus Christi, Texas; and two processing plants under construction in Thomasville, Alabama.

Bobcat expands operations in Bismarck

■ Bobcat Company and Menlo Worldwide Logistics are expanding operations at Bobcat's Manufacturing Support Center (MSC) in Bismarck, North Dakota. Bobcat also plans to acquire additional land at the Northern Plains Commerce Center (NPCC), to create an Innovation Center for product development and testing.

Production of Bobcat compact attachments will begin moving to the new MSC (the former Bobcat production facility) immediately. Menlo has operated in Bobcat's facilities as a strategic logistics partner since 2006. As many as 150 new positions will be created to support expanded production operations for the compact attachments line, which is being shifted to the MSC from a Bobcat Company-owned plant in Litchfield, Minnesota.

This move will allow increased production of Bobcat attachments and equipment in the state of North Dakota, Goldsbury said, adding that market demand for compact attachments has increased as customers seek new ways to diversify businesses by adding more attachments to their existing compact equipment.

Carter named engineering manager at Vecoplan

■ Vecoplan Integrated Controls (VIC) has promoted Ron Carter to electrical engineering manager.

In addition to managing the engineering department at VIC, responsibilities of Carter's new position will include overseeing the design and development of custom control panels and turnkey control systems integration for manufacturing plants. He will also oversee the manufacture and implementation of projects once the engineering phase has been completed.

Carter has a combined 20 years of practical experience from stints at Commonwealth Brands, Lucent Technologies, and R.J. Reynolds Tobacco Company.

Southern Waste Systems' VP joins FCSW board

■ Florida's chief operating officer, Jeff Atwater, has appointed Southern Waste Systems vice president Patti Hamilton to serve on the Florida Commission on the Status of Women (FCSW). Her appointment is for four years. The FCSW is a non-partisan board, created in 1991, consisting of 22 appointed members.

The commission's mission is to study and make recommendations to the State Governor, Cabinet and Legislature on issues affecting women and families in the state.

Hamilton will serve on the Mentoring Task Force and the Public Outreach Task Force.

In addition to her role with the FCSW, Hamilton is on the board of directors for the Business Development Board of Palm Beach County and the South Florida Fair. She also serves as a board member for the Chamber of Commerce of the Palm Beaches, the Florida Festivals and Events Association and the Boca Raton Champions Golf Charities. Hamilton is a member of the National Solid Waste Management Association, the Associated Builders and Contractors Legislative Affairs Committee, the Construction Materials Recycling Association and Recycle Florida Today. Hamilton was instrumental in bringing the ATHENA Awards to Palm Beach County in 1991 and was honored with the award in 2002.

Company Wrench receives distributor award

■ Terex Construction Americas has recognized Company Wrench Ltd. as the top distributor of Terex Fuchs material handlers for 2011. One of the top-performing distributors for several years, this is the first time Company Wrench has been selected to receive the #1 Terex Fuchs equipment distributor award. The company was selected for its continued growth with the material handler line, top sales performance and superior service support of the customer.

I was watching the Superbowl with my 92-year-old grandfather. The team scored a touchdown. They showed the instant replay. He thought they scored another one. I was gonna tell him, but I figured the game HE was watching was better.



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WHAT NEEDS SHREDDING?



BUSINESS BRIEFS

Dust Control Technology adds new VP of sales

■ Dust Control Technology (DCT) has introduced Aaron Valencic as the company's new vice president of sales. Valencic will be responsible for key account development and management across the globe, as well as lead generation and strategic sales planning.

Valencic joins DCT after a 12 year career in sales and management, including 5 years at Philippi-Hagenbuch, Inc. where he served as account manager, selling custom-engineered products to the North American mining industry. He has extensive knowledge in the oil sands and Canadian iron ore industries, as well as coal, mining, aggregates and power generation, and was instrumental in uncovering significant opportunities in previously-untapped markets that are estimated to hold the potential for \$10-15 million in annual sales.

Valencic has broad experience in new product development, helping to make material hauling more efficient and productive.

Valencic is active in numerous industry organizations, including SME, NSSGA and AIST.

Α	OVERTISER INDEX
PAGE	ADVERTISER
A10	AIMS
A7	Al-jon, Inc.
A17	ARPI
A5	Bud Roberts Company, Inc.
A16	Call Shaughnessy
B3	ClearSpan
A14	CP Manufacturing, Inc.
A13, 15 B7,8	DADE Capital Corp.
A9	Direct Response of America
A8	Federal Equipment Co.
A18	Gershow Recycling
A23	Government Liquidation
A2	Iron Ax, Inc.
B5	Lamb Fuels
A14	Moley Magnetics, Inc.
A6	NCM Odor Control
A24	OverBuilt, Inc.
A4	Polymer Recovery Systems
A10	Recycling Equipment Inc
A17	Recycling Services Intl., Inc.
A12	RM Johnson Co, Inc.
B5	S3 Software, Inc.
A11	Sierra International
A18	SSI Shredding Systems, Inc.
A6	Sweed Machinery Inc.
A3	Untha America

Western Metals Recycling expands nonferrous facility

■ Western Metals Recycling (WMR) celebrated its newly expanded nonferrous metal recycling facility in Salt Lake City.

The new state-of-the-art 24,000 sq.ft. covered nonferrous metal recycling facility offers the general public drive through recycling that is fast, friendly, and makes it easy to "go green" and recycle. Western Metals Recycling (WMR) is the largest full-service metals recycler in the Intermountain West.

The new facility opened to the general public on May 16, 2012.

WMR's Salt Lake City recycling center buys ferrous scrap as well as common household nonferrous scrap metal items like aluminum cans and other aluminum, stainless steel, copper and brass products.

GlyEco signs acquisition agreement with Evergreen

GlyEco, Inc. reached a preliminary agreement to acquire certain assets of Evergreen Recycling Inc. Evergreen Recycling is a glycol recycling company based in Indianapolis, Indiana. The transaction is scheduled to close on June 30, 2012.

Evergreen Recycling has been in operation since 1999, primarily servicing the waste automotive antifreeze industry. The company was founded by owner Tom Shiveley, who has operated the business while maintaining his career as an expert in industrial waste water treatment with the Ford Motor Company. He will join GlyEco full time, serving as general manager of the Indiana facility.

Events Calendar

June 4th-5th The 31st Annual Northeast Recycling Conference & Expo. Radisson Hotel, Manchester, New Hampshire. 800-223-0150 • ww.nrra.net

June 19th-22nd Air & Waste Management Conference. Henry B. Gonzalez Convention Center, San Antonio, Texas.

412-904-6003 • www.awma.org July 19th-20th

2012 Stormwater Symposium. Sheraton Baltimore City Center, Baltimore, Maryland. 703-684-2441 • www.wef.org

August 14th-16th WASTECON. Gaylord National Resort & Convention Center, Washington, DC. 240-494-2256 • www.wastecon.org

September 10th-13th Solar Power International 2012. Orlando County Convention Center, Orlando, Florida. 703-738-9460 • www.solarpowerinternational.com

September 16th-18th 5th Annual Waste-to-Fuels Conference & Trade Show. Mystic Marriott Hotel & Spa, Mystic, Connecticut. 800-441-7949 • www.waste-to-fuels.org

September 26th Upper Peninsula Recycling Coalition. Bay

West College Campus, Iron Mountain, Michigan. www.uprecycles.com

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Ashtabula, OH 44005

800-772-7659 www.modroto.com

MOD CO. INTRODUCES LINE OF **ONE-YARD TILT TRUCKS**

The new one cubic yard capacity Poly-Trux[®] P-405 Heavy Duty tilt truck from Meese Orbitron Dunne Co. is rotationally molded in a single piece from HDPE and set within a powder coated steel frame and base that together accommodates up to 1,300 lbs.

The load bearing ability delivers up to 30 percent more strength than many one-yard tilt trucks that rely on structural foam or blowmolding with polypropylene. The tilt truck leads a new line of one-yarder tilt trucks that also includes the Poly-Trux P-405 Standard for lighter duty operation.



RadComm Systems

Oakville, Ontario L6H 5S4

2931 Portland Drive

800-588-5229

RADCOMM DEBUTS HANDHELD RADIATION DETECTION

RadComm Systems, a worldwide manufacturer of radiation equipment, announced the debut of their MedSpec handheld detector.

The MedSpec will allow landfills and transfer stations across the world to quickly identify whether a suspected "hot" load of waste is medically-sourced radiation. This will save landfills and transfer stations time and money by preventing the quarantine of waste vehicles and keeping them on the road.

MedSpec eliminates the need for government inspectors to survey suspect loads by performing this task for them. www.radcommsystems.com



RAYCO Manufacturing 4255 East Lincoln Way Wooster, Ohio 44691 800-392-2686 www.raycomfg.com

RAYCO MANUFACTURING DEBUTS SELF-PROPELLED STUMP CUTTER

The RG1645S self-propelled stump cutter is a compact unit that takes RAYCO's popular RG1645 platform to the next level of performance with a heavier cutter wheel and improved cutting torque. A swing-out operator control station allows for maximum visibility of the cutting action while keeping the operator shielded from chips and debris, and swings in line with the machine to pass through gates.

Wider tires improve floatation and traction. The RG1645S is powered by a Kubota 44 h.p. turbo diesel engine that meets tier 4 interim emissions.

ERIEZ OFFERS NEW EP-REX HYBRID SCRAP DRUM

versatility than a dedicated alignment rack.

ARI-HETRA OFFERS PORTABLE

Ari-Hetra has released their portable Model ALS-18

Heavy-Duty Alignment Stands. These stands are to be

used in conjunction with the HDML Mobile Lifting Sys-

tem, providing a portable solution for heavy-duty

access, making it easy to get to steering and suspen-

sion components during an alignment. They are easy

to move and can be put away when the alignment pro-

cedure is complete. ALS-18 stands work with the Ari-

Hetra HDML Mobile Lifting System - providing more

The ALS-18 stands provide ample under vehicle

ALS-18 ALIGNMENT STANDS

Eriez introduces the EP-RexT Scrap Drum, a new, hybrid scrap drum at a lower price. The electro-permanent EP-RexT scrap drum offers greater strength than traditional electro-axial drums, bringing improved profits to scrap recycling operations. Large sphere-shaped ferrous meatballs or knuckles are no match for the incredibly powerful EP-RexT Scrap Drum.

Much like the P-Rex, the EP-RexT offers advantages in critical performance areas: superior edge-toedge separation, no 'transfer point' drop in magnetic force and no decline in performance due to heat rise.

BUSINESS BRIEFS

Aluminum Association appoints vice chairman

■ The Aluminum Association's executive committee appointed Layle K. Smith, president and CEO of Noranda Aluminum Holding Company to serve as vice chairman of the Aluminum Association.

Smith became president and CEO of Noranda in March 2008. In addition to his time with Noranda. Smith began his career in 1977 at The Dow Chemical Company and has held various management positions including international and business leadership positions at The Dow Chemical Company, COO of Resolution Performance Products and CEO of Covalence Specialty Materials. In a career of over three decades, he has gained leadership experience in specialty and commodity industrial products as well as high tech products for the power industry.

Smith currently serves on the Association's board of directors and executive committee. As vice-chairman, Smith will also chair the Association's strategic planning committee.

Komptech adds Geissinger as new sales manager

■ Komptech USA, Inc. hired Tom Geissinger as an area sales manager covering Ohio, Indiana, Kentucky and Western Pennsylvania.

Geissinger has over 15 years of sales experience and most recently was the Doppstadt sales specialist for Gibson Machinery in Ohio.

Gusmano named 2012 Palm Beach Ultimate CEO

■ Southern Waste Systems, based in Lantana, Florida, president and chief operating officer, Charles Gusmano, was recognized by the South Florida Business Journal as a 2012 Palm Beach Ultimate CEO. The award is given each year to exceptional leaders in South Florida who have set a high standard in business and in the community.

Gusmano has nearly 30 years of experience in the solid waste and recycling industry. He co-founded Southern Waste Systems and Sun Recycling in 1999. Over the past decade, he has been instrumental in the growth of the company, from one recycling yard in Pompano Beach, Florida to 12 facilities spread throughout southeast Florida. Today, he heads 4 separate business units including Southern Waste Systems, Sun Recycling, Sun Disposal and All Star Toilets and leads a team of 450 dedicated employees.

NDA makes changes to board of directors

The National Demolition Association has made the addition of four new demolition professionals to its 2012-2013 board of directors.

Newly named are Alfred Gorick, Jr. of Gorick Construction Co., Inc., Binghamton, New York; Scott Homrich of Homrich Wrecking Inc., Carleton, Michigan: Richard Lorenz of Central Environmental Services, Apopka, Florida; and Craig Sessler of Sessler Wrecking, Waterloo, New York.

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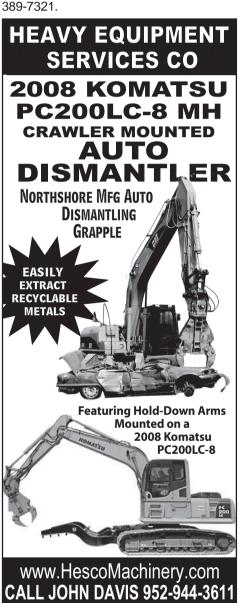
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Auto Recycling

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American Recycler

Material Handlers



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Material Handlers

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CATERPILLAR 2000 M318 MH (Rubber) 36' Reach, Hyd Cab, 12.5KW Gen, Grapple (5) 2008-09 M322D MH (Rubber) 38' Réach, Hyd Cab, 12.5KŴ Gen, Grapple (2) 2004-06 M322C MH (Rubber) 38' Reach, Hyd Cab, 15KW Gen, Grapple 2008 M325D LMH (Rubber) 51' Reach, Hyd Cab, 20KW Gen, Grapple 2007 M325D LMH (Rubber) 51' Reach, Hyd Cab, 20KW Gen, Grapple (2) 2006 M325C MH (Rubber) 47' Reach, Hýd Cab, 15KW Gen, Grapplé 2003 330CL MH (Crawler) 46' Reach, 6' Elev Cab, 24KW Gen, Grapple LIEBHERR (2) 2007 A904C (Rubber) 38' Reach, Hyd Cab, 10KW Gen, Grapple (2) 2001-04 A904C (Rubber) 38' Reach. Hýd Cab, 15KW Gen, Grapple (4) 2005-06 A924B (Rubber) 42' Reach, Hyd Cab, 15KW Gen, Grapple 2002 A924B (Rubber) 42' Reach, Hyd Cab, 15KW Gen, Grapple 2006 A934B (Rubber) 48' Reach, Hyd Cab, 20KW Gen, Grapple 2001 A934B (Rubber) 48' Reach, Hyd Cab, 20KW Gen, Grapple 1998 A932 (Rubber) 48' Reach, Hyd Cab, 17.5KW Gen, Grapple 2003 A954B HD (Rubber) 60' Reach, Hyd Cab, 30KW Gen, Grapple **SENNEBOGEN** 2006 821M (Rubber) 38' Reach, Hyd Cab, Waste Sorting Grapple 2008 830M (Rubber) 50' Reach, Hyd Cab, 20KW Gen, Grapple 2003 8305M (Rubber) 6' Pedestal, Hyd Cab, 20KW Gen, Grapple

2008 840M (Rubber) 62' Reach, Hyd Cab. 25KW Gen, Grapple 2008 850M (Rubber) 62' Reach, Hyd Cab, 25KW Gen, Grapple

2008 870M (Rubber) 65' Reach, Hyd Cab, 33KW Gen, Grapple **FUCHS** 2009 MHL331D (Rubber) 39' Reach, Hyd Cab, 11KW Gen, Grapple'

2007 MHL335D (Rubber) 40' Reach, Hyd Cab, 13KW Gen, Grapple 2005 MHL340 (Rubber) 41' Reach, Hyd Cab, 13KW Gen, Grapple 2008 MHL350D (Rubber) 51' Reach, Hyd Cab, 13KW Gen, Grapple (2) 2003-04 MHL350 (Rubber) 49' Reach, Hyd Cab, 20KW Gen, Grapple 2007 MHL360D (Rubber) 54' Reach, Hyd Cab. 30KW Gen, Grapple SHEARS

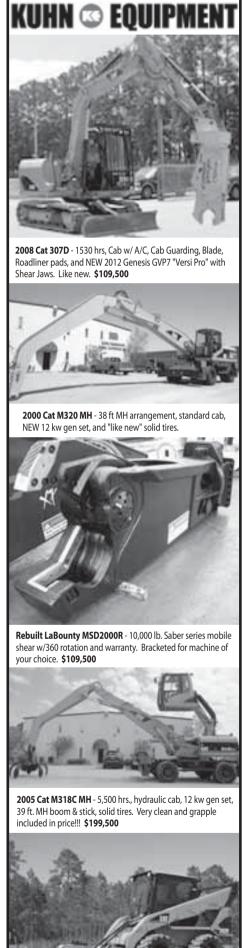
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FOCUS on ALTERNATIVE ENERGY

Inexpensive natural gas spells trouble for future of alternative energy subsidies

by MARK HENRICKS mhenricks@americanrecycler.com

Low prices for natural gas and uncertainty about continuation of federal subsidies is spelling trouble for the future of alternative energy. Recyclers could be affected because of, among other things, the industry's ties to alternative energy through natural gas-fueled vehicle fleets and projects to burn landfill bio-gas to generate electricity.

The alternative energy industry, which generates power from solar, wind, biofuel, geothermal and other energy sources, has been in a challenging period of late. Perhaps the clearest evidence is the recent history of prices investors pay to own shares of companies in the business. The Ardour Global Alternative Energy Index, which tracks the performance of investments in public companies in the alternative energy industry, is valued today about where it was three years ago, while values in the overall stock market have more than doubled during that period.

One of the biggest reasons for alternative energy's stagnation is a historic drop in natural gas prices. The discovery of huge fields of natural gas in the U.S., along with the development of new tech-



The discovery of huge natural gas reserves in the U.S., coupled with new extraction technologies, has applied significant downward pressure on prices.

niques to extract the gas, has caused the price of natural gas to hit all-time lows, especially in comparison to other fuels.

Alternative energy subsidies, meanwhile, have also been declining. Thanks to the expiration of limited-time federal grants, tax credits and loan guarantees, subsidies will amount to just \$16.1 billion this year, roughly half of last year's \$30.7 billion and only about a third of their 2009 peak of \$44.3 billion, according to analysis by the Brookings Institution and World Resources Institute, in Washington, D.C., and the Breakthrough Institute in Oakland, California. By 2014, federal support is expected to decline to \$11 billion, according to this analysis.

Historically, the impact of expiring tax credits has been coupled with sharp See GAS PRICES, Page 7

Student startups awarded 200K for clean energy projects



Young entrepreneurs developing energy from wastewater treatment, robots for cleaning solar panels and solar cell films with 20 percent more efficiency took the top prizes at the First Look West (FLoW) regional finals competition, which closed in May. At an awards celebration held at the California Institute of Technology, Stanford Nitrogen Group, Greenbotics and Xite Solar shared \$200,000 in prize money.

Professor Harry Atwater, director of Caltech's Resnick Sustainability Institute, said, "Successful competitions such as this show how universities, working with investors and the business community, are leaders in accelerating innovation flow to the real world, and in launching our future entrepreneurial leaders."

FLoW represents the Western Region of the Department of Energy's National Clean Energy Business Plan Competition. The winning teams from 6 regions across the country will now participate in the national competition in Washington D.C., June 12 and 13, 2012. The awards event was the culmination of a six month competitive process searching for the untapped clean energy See STUDENT AWARDS, Page 6

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A Letter from the Editor

Readers.

It wasn't that long ago that I dreaded the arrival of winter. Yes, part of it had to do with morning commutes in the snow, shoveling the driveway and having to bundle up in layers of clothing for even quick trips out of doors. But the one thing that I disliked the most was receiving the heating bill each cold and blustery month.

I used to be overjoyed when summer rolled around and I could power down my ancient and sadly inefficient furnace for a few months. Now, however, my summers are no longer the money-saver that they used to be

In fact, this year, my electric air-conditioning expenses have been enormous compared to my winter natural gas costs. While I'm certain that part of that is due to an unusually warm winter in my area, the other factor that played a substantial role is the decreased cost of natural gas.

In this month's Focus cover article, author Mark Henricks discusses how the discovery of massive domestic natural gas reserves, coupled with new extraction technologies, has pushed natural gas prices to an unprecedented low. While this is good news for those of us still using decades-old furnaces, it does not bode well for those looking for subsidies for alternative energy projects.

This reluctance to fund renewable clean energy development is unfortunately myopic. While it may be expedient to rely on inexpensive natural gas, it, like other fossil fuels, is a not an easily renewable resource. Imagine the progress that we as a nation might have made towards energy self-sufficiency had we pressed onward and encouraged innovation rather than complacently assuming that gasoline and diesel would be forever inexpensive.

So, however abundant and inexpensive natural gas may be, there may come a time when we wish that we had paid the short term costs for some long term environmental and economic gains.

I hope everyone has a productive and profitable month. Until next time,

Dave Fournier Focus Section Editor david@americanrecycler.com

Mage Solar modules power nation's largest historic revitalization PV-project

Mage Solar, part of the globally operating Mage Group, announced that its high-efficiency modules are part of an ambitious historic redevelopment project in Louisiana.

Over 3,300 Mage Powertec Plus US-modules supply 1.4 GWh of clean, reliable energy per year to 6 housing projects that were part of the revitalization plan. Among the converted buildings are the iconic American Can and Blue Plate buildings in New Orleans, the latter being on the National Register of Historic Places. Other segments include the city's River Garden Apartments and the Bonne Terre Apartments in Houma with a combined 564kW of solar energy spread out over 69 individual rooftop applications and 26 parking canopies.

The project was designed, engineered and executed by Pontchartrain Mechanical of New Orleans, one of the largest mechanical contractors in the Gulf coast region and provider of environmental systems. Mage Solar has been working closely with PMC's chief system designer and solar department manager Micah Galy to develop solutions for each of the individual installations included in the project: 2,000 black Mage Powertec

Ver Aver

The Blue Plate building, an entry in the National Register of Historic Places, is one of the housing projects included in a Louisiana historic redevelopment project that will utilize Mage Solar products.

Plus modules were chosen to provide a sensible, integrated solution on the historical building portion of the project, and sophisticated power optimizers are installed to avoid power losses due to shading from trees, light poles or buildings.

The project's developer, HRI Properties, has been pioneering methods for building neighborhoods and creating entire communities. Mage Solar's modules have been integrated

into the project by HRI as a part of the company's sustainability mission and long-term energy cost projection.

Funding for the project was made possible through the American Recovery and Reinvestment Act and the EmPower Louisiana initiative administered by the Louisiana Department of Natural Resources. Net metering arrangements have been made with the local electric utilities.

WM landfill to turn waste to green power

Green energy will soon be helping to power Mid-Western homes, following Waste Management's groundbreaking of a gas-to-electric facility at Mahoning Landfill in New Springfield, Ohio.



UPCOMING TOPICS 07/12 Metal Shredders

08/12 Fleet Management Software

09/12 Size Reduction Equipment

10/12 Catalytic Converter Shears

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.

Once construction is completed, Waste Management Mahoning Landfill is designed to generate 4.8 megawatts of electricity, enough to power over 3,500 homes. The plant will be operational by the end of this year.

Methane gas, which is produced in the landfill from the decomposition of waste, will be channeled into engines that are used to create electricity. The electricity generated at Waste Management Mahoning Landfill will go into the electrical power grid.



The U.S. EPA has endorsed landfill gas as an environmentally friendly resource that reduces reliance on coal, oil and other fossil fuels. Like wind and solar power, landfill gas is a resource that can be harnessed to produce energy and has many benefits and advantages compared to fossil fuels and other alternative energy sources.

Waste Management owns or operates over 130 landfill gas-toenergy facilities in North America. Waste Management pioneered landfill-gas-to-energy technology over two decades ago and operates more facilities than any other company in the United States.

In 2007, Waste Management announced four sustainability goals, which included increasing the amount of waste-based energy produced. Currently, the company creates enough energy to power 1.1 million homes, and intends to double that amount to 2 million by 2020. Mahoning Landfill is a big step in accomplishing this goal and represents another source of renewable energy.

An old man went to a wizard to ask him if he could remove a curse he had been living with for the last 40 years.

The wizard said, "Maybe, but you will have to tell me the exact words that were used to put the curse on you."

The old man said without hesitation, "I now pronounce you man and wife."

Assurant offers solar project insurance

Assurant, Inc., a provider of specialty insurance, is offering a new comprehensive insurance solution for commercial solar project developments. The new product, designed specifically for the fast growing 100 kilowatts to 3 megawatts solar market, will allow developers of commercial and industrial scale projects to address problematic risks that have traditionally made financing difficult.

Assurant Solar Project Insurance provides the industry's first warranty administration and comprehensive protection plan for every phase of commercial-sized solar development projects. Assurant's solar coverage is tailored to offer an affordable alternative to current solar insurance products geared toward insuring larger-scale projects at a frequently cost-prohibitive price point. It was created with solar developers, lenders, brokers and other industry leaders and leverages the leading specialty insurer's expertise.

"Energy experts predict strong growth in medium-size solar projects in markets with high electricity prices and strong renewable energy mandates, though significant operational and financial risks often pose challenges during their development, installation and operational phases," said David Schroeder, vice president of operations and industry relations at Assurant, Inc. "Assurant Solar Project Insurance reduces those risks by providing phase-specific insurance for an entire project's lifecycle, satisfying lender and investor requirements to protect project viability and their investments."

With Assurant's Solar Project Insurance, developers do not have to worry about dealing with multiple manufacturers and worrying if they will fulfill their warranty obligations. Assurant's new product bundle incorporates property and liability insurance with warranty management, providing a single point of contact for commercial sized photovoltaic projects or portfolios of projects that each generate between 100 kilowatts and 3 megawatts.

Clean Energy to build CNG stations

Clean Energy Fuels Corp. has contracted with Southeast U.S. solid waste collection, recycling and disposal company Waste Pro USA to build, operate and maintain a new CNG fueling station on Waste Pro property in Fort Pierce, Florida. The private time-fill fueling facility will support the company's new fleet of CNGpowered trash trucks.

Waste Pro recently announced its investment of \$100 million for vehicles and fueling stations to transition a portion of its fleet from diesel fuel to compressed natural gas (CNG) fuel. The investment includes planned construction by Clean Energy of natural gas fueling facilities in the south.

Development of the Waste Pro CNG station at Fort Pierce has been permitted, with opening projected for early third quarter of 2012.

Waste-to-energy technology moves from the lab to the marketplace

Technology invented by a University of California, Davis, researcher that converts solid waste into renewable energy has debuted as the first commercially available, high-solid anaerobic digestion system in the United States.

Ruihong Zhang, a UC Davis professor of biological and agricultural engineering, has been working on her anaerobic digester technology for the past decade, bringing it from the laboratory to the pilot stage in 2006. When Clean World Partners, a Sacramento-based startup that licensed the technology from UC Davis, unveiled the biodigester at a Sacramento, California packaging company, it marked the first time her research has reached the market.

The anaerobic digestion system is located at American River Packaging (ARP). It will convert 7.5 tons of food waste per day from regional food producers, including Campbell's Soup Company, and a half ton each day of unrecyclable corrugated material from ARP into natural gas. The system will generate roughly 1,300 kWh of renewable energy per day, meeting about 37 percent of ARP's electricity needs and preventing an estimated 2,900 tons of waste from entering landfills each year. The project has created about 22 jobs.

"This kind of project and technology is actually changing how societies treat and view waste as a resource, which, overall, leads to a better world, a cleaner environment and new jobs," said Zhang.

Anaerobic digestion relies on bacteria to break down biodegradable waste material in the absence of oxygen. Zhang's system turns that waste into such valuable byproducts as renewable energy, compost, water and natural fertilizer. While anaerobic digestion is not a new technology in itself, operational and material-handling limitations had prevented its commercial adoption.

Unlike most other digesters that primarily treat liquid waste, such as manure from dairy farms and municipal wastewater, Zhang's high-rate digester technology can convert both liquid and solid waste, including food waste, yard waste, plant residues, paper and cardboard.

Zhang also sought to overcome two key barriers to the widespread use of anaerobic digesters: time and money. The new technology makes such waste conversion systems replicable, with many components prefabricated, reducing the time it takes to build them. For example, the Clean World Partners system at ARP went from bare ground to energy production within 90 days and cost approximately \$2 million to \$3 million.

Zhang's system also turns waste into energy in half the time of other digesters and produces more gases that can be turned into clean energy.



Unlike most other digesters that primarily treat liquid waste, such as manure from dairy farms and municipal wastewater, Zhang's high-rate digester technology can convert both liquid and solid waste.

These efficiency improvements are expected to drive down cost and maximize the amount of energy produced and the volume of waste diverted from the landfill.

Clean World Partners formed in 2009 to commercialize Zhang's anaerobic digestion technology and bring it to a wider market. The company plans to open a second waste conversion facility using Zhang's technology at Sacramento County's south area transfer station in June.

The anaerobic digestion facility was first developed and tested as a pilot plant at UC Davis. The university is currently working with Clean World Partners to bring a full-scale biodigester to campus. Though still in the planning stages, that biodigester is expected to help UC Davis West Village, the nation's largest planned zero-net-energy community achieve its goal of generating as much power as it consumes in the course of a year.

Major public funding for Zhang's biodigester research came from the Department of Energy's Community Renewable Energy Development project, the California Energy Commission's Public Interest Energy Research program and CalRecycle.



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EQUIPMENT SPOTLIGHT Natural Gas Conversion

by MARY M. COX maryc@americanrecycler.com

"The business climate for moving away from petroleum to natural gas in the transportation sector is huge – due to the energy security issue, the availability of our own natural gas and the price difference of natural gas, compared to diesel," stated Jim Moore, president of Emission Solutions, Inc. (ESI). ESI works exclusively with International (Navistar trucks and school buses) and is one of the companies involved in the burgeoning industry of compressed natural gas (CNG) powered vehicles.

"We convert existing trucks or buses by swapping the existing diesel engine out, or the local International dealers accomplish the conversion from diesel to CNG 'in-frame' (under the hood), by installing the CNG components that we provide to them. Our engine is also offered by International in their new trucks from the factory as an OEM product," said Moore.

He described their engine as a 7.6L CNG engine that primarily serves intra-city fleets that run a daily route, with a daily return to a central location for refueling. Some examples of this include school buses and municipal and local food-beverage distribution fleets. Moore added, "Those of us in the CNG industry lobby for the NAT GAS Act, which would provide incentives that encourage local fleets to convert to natural gas for their vehicular use, sooner rather than later." The NAT GAS Act is the acronym for New Alternative Transportation to Give Americans Solutions Act of 2011 which is an amendment to a Senate Transportation bill.

Technocarb was founded to develop, manufacture and distribute alternative fuel conversion systems for gasoline and diesel fuelled engines worldwide. Vice president Peter Gordon said, "We focus on customer service and cost effective products to define our market niche." The company manufactures and sells a wide variety of vehicle-specific alternative fuel systems, as well as "universal" style and industrial application conversions. The systems typically consist of the components required to convert a vehicle or piece of industrial equipment from gasoline operation to alternative fuel operation, except fuel tanks and high pressure fuel lines. Technocarb has also developed a state-of-the-art supplemental CNG and liquid propane gases (LPG) "blending" system to significantly reduce harmful emissions and reduce fuel costs for both turbo and non-turbo diesel applications. Ethanol, hythane (hydrogen/methane) and ammonia conversion system research is also ongoing.

Gordon explained some of the challenges of working in his industry, "EPA rules governing diesel/CNG systems make it almost impossible monetarily, for anyone but an OEM to achieve outdated, impractical rules. Also, CNG tank prices are ridiculously high due to limited competition and U.S. regulatory requirements, so the industry is desperate for fuel saving solutions.

"Solutions are already available, but again – due to regulatory barriers – emissions certification costs and the fact that both State and Federal grants are only available to EPA or CARB certified products, the OEMs in fact

> are the only companies who c a n afford to jump through all the usual regulatory hoops. There is very little incentive to change this business model. If one considers the incredible prices being

charged for replacement 'diesel' engines that are alternative fuel, the only companies/public utilities that can afford the 'upgrades' are subsidized by the same government who make much more reasonably-priced products effectively unavailable, due to cost barriers.

"The only people who win are the companies that are funded by special interest groups who work the government cash cow year after year, all at the expense of the taxpayer. If 1 percent of the money being spent on subsidies, regulatory enforcement, etc. was instead spent on streamlining a fair and equi-

table test verification program, the cost of systems would then drop like a rock and become available to a much wider range of diesel engine users. This would benefit millions of diesel engine owners, not just a few publicly-funded operations."

Gordon went on, "One can walk into any automotive/truck parts store and buy a huge range of items that are in direct violation of EPA and CARB 'tampering' rules. Every OEM selling parts that change the operating parameters of a vehicle is in direct violation of EPA CARB rules, yet this is never addressed because these companies are 'too big' to be held accountable. Simultaneously, the alternative fuel industry, which as a whole promotes cleaner alternatives, is scrutinized in a very severe manner. It certainly seems that this situation exists because a much smaller group is involved, which cannot afford to legislatively challenge the status quo.

"The single biggest environmental issue worldwide is diesel particulate emissions. Diesel/alt fuel systems from virtually any source reduce particulate emissions in a very cost effective manner. The technology is available now, not in 20 or 30 years. Still, diesel engine owners have no reasonablypriced options to reduce particulates, reduce diesel fuel consumption and more importantly, save some money that they use to invest in tomorrow. Natural gas is at a historically low price, gasoline and diesel prices are



Cummins Westport, Inc.

high and going higher. It makes sense to clean up the oldest and most toxic engines now rather than forcing the public to spend money it doesn't have on new vehicles and equipment when there is a cost effective, cleaner solution under our noses. It is difficult to cite 'testimonials' about the effectiveness of alternative fuel systems for two reasons: 1) people fear government reprisals for the 'crime' of cleaning up the environment and saving some **See SPOTLIGHT, Page 5**

Manufacturer List

BAF Bill Calvert 214-231-1450 www.baftechnologies.com

Cummins Westport, Inc. Gillian Hesser 604-718-8100 www.cumminswestport.com

Technocarb Equipment Ltd. / EcoDiesel System Division Peter C. Gordon 604-854-6264 www.ecodieselinjection.com

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WM expands natural gaspowered fleet and opens Texas CNG fueling station

Compressed natural gas, which reduces air pollution in collection vehicles, is now available to some local commercial fleets and will soon be to retail customers.

Waste Management announced plans to expand its fleet of natural gaspowered collection vehicles in the Houston area and open a new compressed natural gas (CNG) fueling station in Conroe that will increase access to the cleanburning fuel.

Waste Management currently operates 5 CNG-powered collection vehicles in Houston's north suburban communities and expects to roll out an additional 35 in the area by the end of 2012. The public fueling station will refuel Waste Management's local fleet and sell CNG to commercial fleets. Soon, it will also open to retail consumers with CNGequipped vehicles.

"Since natural gas-powered collection trucks run cleaner and quieter, we've made the commitment to use more in our local operations and support them and our community by opening a public CNG station," said Don Smith, area vice president for Waste Management's Texas and Oklahoma region.

CNG is one of the cleanest fuels currently available for use in heavy-duty trucks. Its use reduces particulate matter emissions to nearly zero, carbon monoxide emissions by 75 percent, nitrogen oxide emissions by up to 49 percent, and carbon dioxide emissions by 25 percent. As an additional benefit, CNG offers cost savings compared to traditional fuels and runs 50 percent quieter than diesel trucks.

The Conroe fueling station and local CNG vehicles are one element in Waste Management's larger sustainability efforts. In 2007, the company set a goal of reducing fleet emissions by 15 percent and increasing fuel efficiency by 15 percent by 2020.

"Waste Management already operates over 1,400 CNG vehicles, the largest fleet of CNG recycling and waste collection trucks in North America," said Eric Woods, vice president of Fleet & Logistics, Waste Management. "Each additional Class 8 diesel truck we replace with natural gas reduces diesel use by an average of 8,000 gallons per year and cuts annual greenhouse gas emissions by an average of 22 metric tons.

"In 2012, natural gas vehicles will represent 80 percent of our annual new truck purchases and continue for the next 5 years. We also have 28 fueling stations in North America and plan to have 50 in operation by the end of 2012," Woods concluded.

Spotlight =Continued from Page 4

money, and 2) no one wants to give the 'competition' any information that may help them compete," Gordon concluded.

Cummins Westport (CW) manufactures natural gas engines for the on-road automotive market, also in applications such as trucks and buses. CW engines are 6 cylinder, spark-ignited engines based on the Cummins diesel engine. The company claims the engine offers proven reliability, durability and performance.

Engines are 100 percent dedicated natural gas engines, built in the factory for installation into new vehicles. They are not conversions or conversion kits. For the waste and recycling markets, the Cummins Westport ISL G engine is available from 250 to 320 hp and used in refuse, truck and vocational applications. It meets 2010 EPA and CARB

emissions standards with the use of a maintenancefree, three-way catalyst. No selective catalytic reduction is required and the ISL G has been a very popular engine in the refuse market.

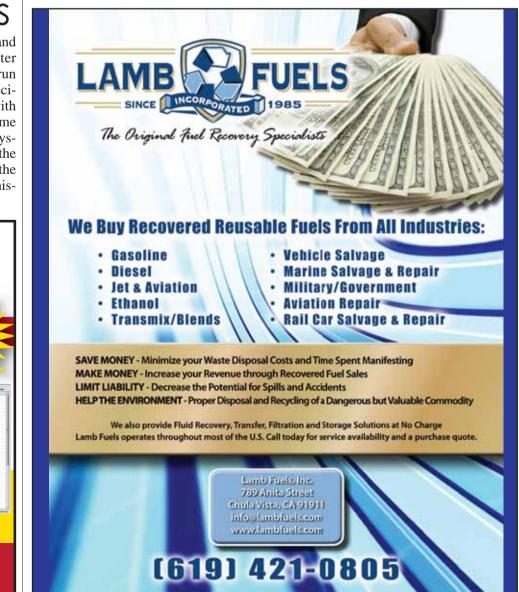
For larger horsepower requirements, the ISX12 G natural gas engine will be available in 2013. Based on the Cummins ISX12 diesel engine platform, it will also operate exclusively on natural gas (CNG or LNG), utilizing Cummins Westport's proprietary spark-ignited, stoichio-



Emission Solutions, Inc.

metric combustion with cooled exhaust gas recirculation technology, first introduced with the ISL G. Preliminary specifications include a range of ratings to 400 hp and 1,450 lb.-ft. torque, optional engine brake, and manual and automatic transmission capability to meet customer and original equipment manufacturer requirements. The ISX12 G is designed for refuse applications, and regional haul and vocational truck/tractor – intermodal and distribution operation, pickup and delivery.

Enclosed is my 2005 Form 1040, together with payment. Please take note of the attached article from "USA Today" archives. In the article, you will note that the Pentagon paid \$171.50 each for hammers and NASA paid \$600.00 each for toilet seats. Please find enclosed in this package four toilet seats (value \$2,400.00) and six hammers (value \$1,029.00). This is in payment for my total tax due of \$3,429.00. —Sincerely, another satisfied American taxpayer



Veolia cleans up fleet with CNG-powered trucks

Veolia ES Solid Waste, Inc., headquartered in Chicago, Illinois, is replacing its Evansville, Indiana, fleet with compressed natural gas (CNG) powered refuse trucks.

Indiana-based manufacturer Autocar built the chassis for 20 of the trucks and Kenworth manufactured 8 roll-off trucks for Veolia's new fleet. All will service over 24,000 residential and commercial customers across Vanderburgh, Warrick, Gibson, Posey, Spencer and Henderson counties in the greater Evansville area. The new trucks run approximately 15 percent (8 to 10 decibels) quieter than trucks powered with diesel engines. The trucks also come equipped with automated collection systems that increase efficiency, protect the health and safety of drivers, prolong the life of the truck and further reduce emissions.



A Closer Look

by Donna Currie

Renewable Biosystems, LLC Peter Behrle • 973-227-5757

The recycling industry isn't what it used to be. It's no longer good enough to recycle the easy stuff – now it's about finding ways to extract value from material that would normally be land-filled.

That's exactly what Renewable Biosystems is all about. The company has licensed a technology that extracts oil from organic waste material like animal offal, DAF sludge (from slaughterhouse wastewater), landfills and food waste from manufacturers.

The company doesn't do the

actual processing, but builds and engineers what its customers need to recover oil from those organic materials. Peter Behrle, the company CEO, said that some of that oil is already being reclaimed, but his technology makes it less expensive and more efficient.

In some cases, oil can be recovered from materials that were previously discarded. The DAF sludge is one example. That sludge, from slaughterhouses, is normally plowed into the ground. Behrle said this doesn't add any nutrients to the soil – it's just a method of disposal.

Berhle said that with his equipment, first the oil is removed from the DAF sludge. Depending on the sludge, up to 30 percent of it can be recoverable oil. Then the solids are reclaimed for use as compost. Last, the water is treated so it can be used at composting facilities.

Behrle licensed the technology to do the oil extraction from a British company, and that license allows Renewable Biosystems to use the technology throughout North America and the Caribbean. So for, one machine has been installed and more are in the works.

Behrle said that the company offers several options for potential customers, including revenue sharing and rental options, but that "it's always financially beneficial" to the customer. Not only does the oil bring in revenue, but the process also lessens the cost of waste removal and disposal.

The oil that comes out of this process can be used for biodiesel, mixed into feed for livestock, or burned as fuel. Berhle said that the material is the consistency of corn oil, but the color varies depending on what material the oil was extracted from. The oil that comes from poultry processors is lighter in color than what comes from landfills, for example.

Behrle started the company about three years ago, after working in the biodiesel industry for many years. He said that when soybean prices went up in 2007 and that made feedstock for biodiesel more expensive, he decided that being in the feedstock business was better than being in the biodiesel industry.

He said that one thing that helps the biodiesel business – which in turn helps his business – is that the government's renewable fuel standard requires that biodiesel must be blended into the fuel stream. This is much like the regulation that requires that ethanol must be blended into gasoline. This year, 1 billion gallons of biodiesel will be blended into diesel fuel.

Renewable Biosystems currently has five employees and partners with a nearby firm for engineering needs. Behrle said he has spent a lot of time getting financing for the business, but now "it's getting pretty darned exciting" as the financing stages are winding down and the business is "in transition from a startup to an operational company."

He said, "I'm recycling interesting things that would normally be thrown away," but the big challenge is that he's introducing a brandnew technology to the U.S. He said it can be difficult to get large companies to change their ways, but that's completely understandable because "they have other things on their minds."

The challenge is also one of the things he likes best. "Everything we do is new," he said. "We have to figure out what people haven't figured out before."



—Peter Behrle

Student awards

Continued from Page 1

innovation that lies in American university labs. In its first year FLoW attracted 83 applicants from 34 universities across 12 states, and saw inventions ranging from new battery materials for portable electronic devices to net energy+ home kits, hydroponic farms and telephone apps for tracking energy use in the home.

At the Regional Awards Celebration, keynoter and Judge Andrew Chung, partner at Khosla Ventures, captured the tone of the competition during an address that touched on the importance of thinking beyond the obvious. "Entrepreneurship shouldn't be about extrapolating the past, but rather inventing the future," Chung said. "Startups shouldn't let the word of the 'experts' or conventional 'wisdom' constrain them from imagining new possibilities."

At the FLoW competition, a top panel of judges from Mohr Davidow, Khosla Ventures, Kleiner Perkins, Sierra Ventures, CalCEF Clean Energy Angel Fund, the Angeleno Group and Southern California's Pasadena and Tech Coast Angels were amongst the investor groups to decide on the following awards:

First Place: Stanford Nitrogen Group's Yaniv Scherson and his team tackled a worldwide pollution problem with engineering smarts that yields a new source of energy while handling a serious waste issue. Stanford Nitrogen Group's innovative CANDO process not only removes waste nitrogen, but also converts it into a combustible gas that can "turboboost" energy recovery from wastewater treatment systems.

Nitrogen runoff as ammonia accounts for a growing number of "dead zones" in coastal waters, more than 400 around the world, and billions of dollars in economic losses from damaged fisheries and lost tourism. Uncontrolled nitrogen runoff contributes to the swelling burden of wastewater treatment that imposes a 3 percent load on the U.S. energy supply alone. Cleaning up water discharges is often the highest energy expenditure for U.S. municipalities, accounting for 30 to 60 percent of city energy budgets.

At its core CANDO relies on novel combinations of microbes that have the potential to reduce the cost of treating nitrogen by 50 percent while generating nitrous oxide, a new energy source never before considered in the management of wastewater. Limiting nitrogen discharge has become a legislative priority in the U.S. and Europe, creating a growing \$1.6 billion annual market for nitrogen disposal processes such as CANDO. Scherson said that the company's next steps will be to build a pilot facility and begin testing a scaled up version with municipal partners and waste treatment corporations.

Second Place: Greenbotics' university team from UCLA and Caltech spotted a \$3 billion global market opportuni-

ty in cleaning dirty solar panels at solar power plants that are currently operating below their peak performance. The company's cleaning service is centered on a robotic vehicle (GB1) that drives directly on top of rows of panels, brushing panels clean with very little water, no gasoline and minimal human assistance. Greenbotics' launch market consists of utility-scale PV projects greater than 10 MW in California, New Mexico, Nevada and Arizona. This market currently represents 368 MW of installed capacity across 18 plants, and is expected to grow significantly to 20GW of installed capacity across 135 plants by 2015. This annual beachhead market for Greenbotics is \$200M.

Third Place: Xite Solar's UC Berkeley team has developed a new class of solar cells that could provide the long-awaited breakthrough that will make solar a major source of energy production. Solar power currently accounts for just 1 percent of the electrical energy market and one reason is that low-cost, thin film solar cells are somewhat inefficient energy converters.

Xite Solar's founder Will Regan said that by fine tuning the junctions between the materials comprising today's commercial thin film cells, Xite can improve efficiencies by 20 to 40 percent. Even more exciting, the technology could also open up the commercial viability of a whole new group of cheap, non-toxic semiconductor materials which will make solar affordable. Altogether, Xite will tap into an estimated addressable world market of \$3 to \$4 billion for thin film solar cells. The company's next steps will be to work with thin film manufacturers and other corporate partners to perfect the commercial applications and begin developing prototypes and a low-cost fabrication facility.

Promising Idea: Hawaii's eHale took the inaugural Promising Idea award given to companies whose business vision has potential but is not quite a ready-to-go business. E-Hale is a Hawaiian alternative design group, integrating sustainable materials, ergonomics and S.E.E. (Spot Energy Enabling)[®] energy storage units within innovative indoor and outdoor, home and office furniture. The idea behind eHale's outdoor approach is to integrate photovoltaic cells into the design of furniture that provides a convenient source of stored energy for portable power devices.

In addition to the prize money FLoW's partners offered contestants experienced mentors, legal start-up packages with firms such as Morrison & Foerster and the opportunity to pitch to investors ready to take action and work with these teams. Partners such as the Cleantech Open and UC Davis's Green Technology Entrepreneurship Academy provide places for FLoW finalists in premier entrepreneurial programs for commercializing green tech innovations. Selected companies will also enjoy access to facilities and services in the Los Angeles Cleantech Incubator, the city's new innovation center supporting the cleantech entrepreneur.

There was once a young man who, in his youth, professed his desire to become a great writer. When asked to define great, he said, "I want to write stuff that the whole world will read, stuff that will make them scream, cry, howl with emotion and anger!" He now works for Microsoft writing error messages.

June 2012, Page B7

Juhl Wind closes Power Engineers acquisition

on the acquisition of Power Engineers Collaborative, LLC (PEC) - a Midwest engineering firm that provides services to clients which include electric utilities, independent power producers (IPP), and industry and building systems. Power Engineers Collaborative, LLC will continue to conduct its business under its industry-recognized name and its management/operations remain will unchanged.

Juhl Wind, Inc. has recently closed very clear benefits to our acquisition of PEC: experience, significant expansion of our base business and an opportunity for our team to offer increased capabilities throughout the energy industry. The addition of the business into our organization brings an expected \$4.5 million per year in annual revenue to our base business along with a host of cross-selling opportunities that we expect will lead to additional growth at PEC and across all of our subsidiaries."

Dan Juhl, chairman and CEO of Juhl Wind, Inc., said, "We saw three

Gas prices •Continued from Page 1

drops in the installation of wind powered generation facilities, according to the American Wind Energy Association, a Washington, D.C., trade group. From 1999 to 2000, the number of megawatts of wind power generation installed dropped 93 percent as then-effective federal subsidies expired. From 2003 to 2004, the end of a subsidy program produced a 77 percent falloff.

Several forces are combining to depress federal subsidies, including declining dependence on foreign oil. general budget pressures and electionyear politics. The political fallout is particularly pointed because of the scandal surrounding Solyndra, a solar power company that received a half-billion dollars in federal loans before suddenly seeking bankruptcy and ceasing operations in 2011.

Alternative energy has trouble remaining financially viable without such guarantees because of the large cost differential between it and other sources of power. Compared to coal, solar is about three times as expensive on a cost per unit of energy basis. It's about twice as expensive as natural gas. Wind is approximately a third more costly than coal, and also significantly more expensive than natural gas.

Effects on Recyclers

Many members of the recycling industry rely on natural gas-fueled trucks to collect recyclables and move materials inside processing facilities. However, the Natural Gas Act, which would provide up to \$5 billion in tax incentives to convert over-the-road trucks to natural gas-fueled engines, is stalling in Congress. Again, part of the reason is reduced dependence on Middle Eastern oil, in particular. Today, thanks largely to imports of oil from Canada and Mexico, less than 10 percent of U.S. oil comes from the Middle East. However, natural gas-fueled internal combustion engines aren't the only alternative energy technology feeling the effects of lackluster federal financial support.

Other biofuels, including methane gas produced from landfills and animal waste, wood chips made from construction and demolition debris and other recycling-related power sources, are also feeling the neglect of government finan-

cial stimulators. Like wind and solar, biofuels need government support to compete effectively. Congress has mandated production of 36 billion gallons of biofuel by 2022 but in summer 2011 voted to end federal subsidies of ethanol, a biofuel derived primarily from corn.

Summary

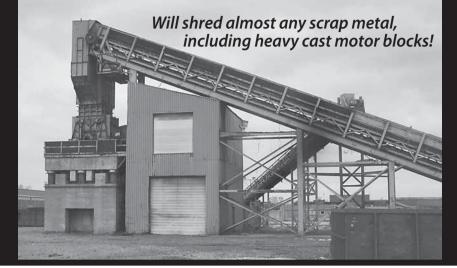
Based on a quick look at the forces in play, the short-term future of alternative energy seems bleak. However, there are also significant forces pushing for more use of alternative energy, and they are beginning to make some progress. "The first signs of a transition to increased reliance on natural gas in the transportation sector are beginning to emerge, but this transition will not proceed optimally or quickly unless we make proactive policy choices," the Brookings Institute's Michael Greenstone told the Congress Joint Economic Committee recently.

Greenstone noted that fossil fuels continue to receive significant government financial subsidies, and called on the continuation of subsidies to alternative energies as well. As for the natural gas glut that is currently pushing down prices, some of the largest energy exploration companies have temporarily suspended drilling for more gas. And the unusually warm U.S. winter of 2011-2012, which is also cited as a factor in keeping natural gas prices low, also presumably won't be repeated, at least forever.

Greenstone called for specific measures including subsidizing natural gasfueled vehicles similarly to the way allelectric vehicles are subsidized now. He also recommended policymakers include so-called social costs, such as environmental damage, when deciding which forms of energy are most cost-effective. Using this measure, wind and solar are much more competitive compared to coal and natural gas, for instance.

Greenstone expects that, unless circumstances change drastically, natural gas will play a much larger role in the country's energy future, while alternative energy resources also increase their share, although less significantly. For now, however, recyclers who count on alternative energy to power their vehicles or provide profitable uses for recycled materials from wood chips to livestock manure are facing an uncertain future.

Williams Model 760 **Metal Shredder**

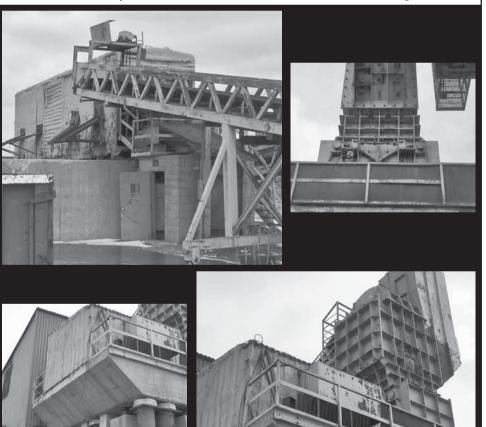


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