



# American Recycler

NewsVoice of Salvage, Waste and Recycling

AmericanRecycler.com

## Waste-to-energy ignorance slows growth

by MIKE BRESLIN

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PHOTO COURTESY OF COVANTA ENERGY

Covanta's Alexandria/Arlington Resource Recovery Facility began commercial operation in February 1988 and serves about 300,000 residents of the County of Arlington and the City of Alexandria, which jointly own the site.

The main barrier holding back the building of waste-to-energy (WTE) plants in the United States is a misunderstanding of facts among the general population. Mention burning garbage to generate energy and the reaction is usually negative because people envision stinking, billowing black smoke and ash falling on their heads – unenlightened heads. They are thinking of old fashioned, dirty incineration where burning only serves to reduce mass with no energy harvest.

Incineration has come a long way. Today, municipal waste combustion units (MWC) are in compliance with the Clean Air Act for Maximum Achievable Control Technology (MACT). A United States Environmental Protection Agency (EPA) memorandum issued in 2007 actually called MWC-MACT performance “outstanding.”

Disposal of waste by burning dates back to man’s first use of fire, but it was not until 1975 that burning solid waste to generate energy became commercially viable in the United States. That’s when the first commercial plant opened. It still operates in Saugus, Massachusetts.

Over the intervening 35 years, the industry has advanced its technology considerably and developed pollution controls that make it one of the cleanest forms of energy generation. We asked Paul Gilman, chief sustain-

ability officer at Covanta Energy about pollution: “We produce electricity with fewer emissions than coal and oil, and most of our plants emit less than natural gas facilities. In some plants we tie natural gas.”

Covanta is the largest WTE company in North America with 41 plants in 16 states and one in Canada. In North America they annually process more than 20 million tons of municipal solid waste to generate over 10 billion pounds of steam and approximately 9 million megawatt-hours of electricity.

tions to the overall effort to achieve increased renewable energy use and the many associated positive environmental benefits.”

Generally speaking, however, people do not understand the benefits of converting solid waste into power, nor the state of the American industry.

*The New York Times* published a story in April entitled, “Europe Finds Clean Energy in Trash, but U.S. Lags.” The article told how Europe has embraced WTE, has about 400

See WASTE-TO-ENERGY, Page 4

## Companies collaborate to begin recycling steel mill dust

Nippon Steel Corporation and Kobe Steel, Ltd. announced that they will begin construction of a plant to recycle steel mill dust into direct reduced iron. As part of the objectives to enhance and expand their alliance, the two companies decided to carry out the project through a joint venture and undertook preparations to start the new business.

The joint venture plans to stably produce competitive iron units by recycling steel mill dust, a byproduct from the steel-making process. Due to the sharp increase in steel demand centered on emerging

countries, raw material prices have escalated. This business would be an extremely effective approach to secure competitive iron units in a business environment of unstable raw material prices and availability.

Through the joint business, both Nippon Steel and Kobe Steel will be able to promote steel dust recycling and zero emissions in the local region beyond the framework of each individual company by integrating the process technology established by Kobe Steel and operation know-

See STEEL MILL DUST, Page 6

## Solar saves water



Focus Section Cover, Page B1

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# Compostable bamboo used in Dell's cushion packaging

Dell's bamboo packaging has been certified "compostable," making responsible disposal of the packaging easier and more sustainable for customers.

The packaging recently received American Society for Testing and Materials (ASTM) D-6400 certification. This certification confirms the packaging, made from mechanically pulped bamboo from a Forest Stewardship Council-certified bamboo forest in China, will compost and biodegrade at a rate comparable to known compostable materials when added to a hot, active compost pile. The certification also assures that the compost resulting from the packaging's degradation process is of good quality and can sustain plant growth.

Streak, Dell's five inch tablet, is packaged in cushions made from sustainable, compostable bamboo.

Dell began using bamboo cushions to package its Mini 10 and Mini 10v netbooks in November 2009. Dell recently extended its use of bamboo packaging to include a number of Dell Inspiron laptops, building on its commitment to

make being green easy and cost-effective for customers.

Dell works with bamboo packaging supplier Unisource Global Solutions (UGS) to ensure all processes associated with the bamboo's production meet the highest standards. The company sources its raw bamboo from a forest that follows Forest Stewardship Council (FSC) principles and criteria. The bamboo forest is located in China's Jiangxi Province – far away from pandas' known habitats. Dell worked with UGS to secure FSC-certification for the bamboo's full chain of custody, from the forest to the manufacturing facilities.

Dell, Georgia Pacific, UGS and Environmental Packaging International are also in the process of certifying the packaging for recycling.

By 2012, Dell aims to reduce packaging volume by 10 percent; increase the amount of recycled content in packaging by 40 percent; and increase the amount of materials in packaging that's curbside recyclable to 75 percent.



## Miami-Dade's recycling reaches 100,000 tons

In less than two years Miami-Dade County has reached an important milestone – over 100,000 tons of paper, plastic, metal cans, glass and other materials have been removed from Miami-Dade's waste stream and recycled under the new single-stream recycling program.

"It took us less time to reach and surpass the 100,000-ton mark under our single-stream recycling program than it did under our old two-bin system," said Miami-Dade solid waste director Kathleen Woods-Richardson.

Miami-Dade began recycling in May 1990. Since then, the County has collected a total of about 870,000 tons of recyclable materials, with 100,000 of those tons coming after Miami-Dade converted to single-stream recycling in late June 2008.

In addition to saving resources such as metal ores and trees, recycling helps conserve energy, water and landfill space. Additionally, the reduced energy needs of handling recycled materials over raw materials results in decreased greenhouse gas production.

## Nucor announces 149th consecutive cash dividend

The board of directors of Nucor Corporation declared the regular quarterly cash dividend of \$0.36 per share on Nucor's common stock. This cash dividend is payable on August 11, 2010 to stockholders of record on June 30, 2010, and is Nucor's 149th consecutive quarterly cash dividend.

*Shun idleness. It is a rust that attaches itself to the most brilliant of metals.*

—Voltaire

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## Allied Waste opens Oregon food composting facility

Allied Waste, a Republic Services company dedicated an upgrade to its Pacific Region Compost (PRC) Facility that will serve as the state's first food composting facility.

This is Oregon's first facility permitted to accept all food waste including meat, bread and vegetable products. Another facility in the Portland area collects a small amount of food waste and transports it to the nearest facility in Washington, a round trip of 344 miles.

The Oregon Department of Environmental Quality (DEQ) found that almost 15 percent of the material land-filled in Oregon is food waste.

Accepting food waste, as opposed to just yard waste, required additional infrastructure and equipment. Allied Waste paved two acres and purchased and installed a composting system that has been used successfully in numerous facilities in Washington and California.

Called aerated static pile technology, this system captures and controls emissions from the composting process using a negative air system and requires a smaller footprint than other methods, which also reduces the amount of storm water runoff.

The food waste will be placed on the paved tipping area onto a bed of ground wood or yard debris to absorb

any free liquid. After contaminants such as plastic are removed by manual sorting, the food waste will be mixed with other organic wastes including ground yard debris, and moved to the negative air composting area. The composting row is covered to prevent exposure to rainwater. After composting for 75-90 days, the material is screened to meet market specifications and tested for quality assurance.

The Company conducted a 6 month pilot that began in fall 2009.

Restaurants in Corvallis and Salem, Oregon State University, and grocery stores in Portland took part in the pilot program showing food waste composting at Allied Waste's PRC to be popular with participants. "Based on the great response the program has received, it is obvious that we are fulfilling a need," said Robin Murbach, general manager, Allied Waste.

Now that the pilot program is over food waste recycling will soon be expanding in Oregon to include residential food waste composting to residents of Corvallis, Salem and portions of Portland.

This nutrient rich compost will be available for sale beginning this summer. It will be available in bulk for \$12 per yard at the PRC.

## New recycling bins at rest stops in California

Citing the need for all Californians to work together to increase recycling, the California Department of Transportation (Caltrans), the plastics industries of the American Chemistry Council and Keep California Beautiful (KCB) are working to place new recycling bins and educational signage at the Gaviota, Camp Roberts and Shandon rest areas.

Until now, there has not been a widespread campaign that makes it easy for travelers to recycle while discouraging them from littering. More than 100 million motorists visit California's 87 roadside rest areas every year. With this expanded program, travelers have more opportunities to recycle while they are on the road.

"This campaign continues to call attention to recycling bins at the rest stops, helping to increase recycling and encourage proper waste disposal," said Rich Krumholz, director, Caltrans District 5.

In 2009, the public-private partnership between Caltrans, ACC and KCB led to the placement of nine new recycling bins and educational signage at the H. Dana Bowers Rest Area and Vista Point, north of the Golden Gate Bridge. This year educational signage will be placed on 18 new bins at the Camp Roberts rest area and the partners will place recycling bins at the Shandon rest area when it opens in the fall.

## Novelis chosen to supply aluminum sheet for BMW sedan

Novelis announced that it has been selected as the main supplier of aluminum sheet for the sixth generation BMW 5 Series sedan, which went on sale this spring. This latest model features lightweight aluminum sheet in the doors, hood, front fenders and reinforcement parts. In addition, BMW has specified Novelis Fusion technology for the door structures, which is likely to be the biggest-selling automotive application to date for this patented multi-layer aluminum product.

The use of Novelis Fusion has enabled BMW to manufacture one-piece aluminum door structures, with integral window frames, to a design that is not

achievable with conventional aluminum sheet. The result is a 25 percent reduction in the weight of the door, when compared with a similar steel design. It is the unique combination of core properties and surface characteristics provided by the multi-alloy composition of Novelis FusionM that makes this possible.

The new 5 Series continues BMW's growing use of aluminum sheet. Novelis also currently supplies aluminum sheet for a range of other BMW models, including the M3 Series, 6 Series, 7 Series, X6, X5 and Z4. The lightweight material helps deliver improved performance through overall vehicle mass reduction.

## Anaerobic digestion plant opens in United Kingdom

A Waste & Resources Action Programme (WRAP) supported anaerobic digestion (AD) plant has opened on a Staffordshire farm. The plant will supply 1.3mw per year of renewable energy to the National Grid – enough to power more than 1,300 homes and businesses.

The venture, at Lower Reule, which has received a grant from WRAP, currently has capacity to process 15,000 tons of waste per year. It will be able to process 30,000 tons by the autumn when a second phase of development is completed.

Most of the waste will come from food waste collected separately at the curbside by Newcastle-under-Lyme Borough Council, plus food waste from supermarkets and food manufacturers. The AD plant will also process 1,000 tons of pig slurry and 1,250 tons of maize silage each year from the farm on which it is based.

The AD plant is run under the name Lower Reule Bioenergy and has provided a new venture for the farm, which keeps pigs and grows a variety of arable

crops, including maize, barley, wheat and oats. The farm also supplies approximately 1,400 tons of strawberries per year to supermarkets.

The biogas will be burnt through a combined heat and power plant, which produces equal amounts of heat and power. Approximately 1.3mw per year of power will be supplied to the National Grid and the AD unit will produce enough electricity to run itself.

A number of options are being considered for the heat, which may be used to heat the strawberry tunnels on the farm to extend the growing season or to grow asparagus on heated beds.

The nutrient rich biofertilizer, which is an end result of the AD process, will be produced to the national specification –BSI PAS110 and used as a fertilizer on grassland and arable land at Lower Reule Farm and on neighbouring farms.

According to the Anaerobic Digestion and Biogas Association (ADAB), there could be 1,000 anaerobic digestion plants in the UK by the year 2020.

## Sacramento brings in RecycleBank

Through a pilot program offered by a public/private partnership with RecycleBank, residents of Sacramento's South Meadowview neighborhood will receive valuable rewards such as savings on groceries, pharmacy costs, sporting goods and school supplies for their recycling efforts. City officials expect to see an increase in clean recyclables, a marked decrease in contamination, and

meaningful savings on items such as groceries and household items for their residents. Sacramento is the second city in California to collaborate with RecycleBank, following Los Angeles, which began its program in April. RecycleBank is funded by a grant from the CalRecycles – State of California Department of Resources, Recycling and Recovery.

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# Waste-to-energy

■Continued from Page 1

plants, is expanding existing facilities and building new ones. The article covered positive aspects of WTE, but erred in one important statement: "By contrast, no new waste-to-energy plants are being planned or built in the United States..."

Ted Michaels, president of the Energy Recovery Council, the trade organization representing the United States waste-to-energy industry, wrote a letter to the *Times* editor (as yet unpublished) that said in part: "...I would take issue with the assertion that there are no new waste-to-energy facilities being planned or constructed in the United States. On the contrary, the United States has seen a resurgence of interest in waste-to-energy and new capacity has been planned and constructed."

Michaels cited expansions within the past three years of two facilities, each of which added over 50 percent capacity to meet new demand. Other expansions are currently underway in Hawaii and New York, two in Minnesota and several more are being considered at other locations. New facilities have been proposed and are underway in Florida and Maryland. Other facilities are being actively considered in many parts of the country, including plants in Los Angeles and Chester County, South Carolina. Michaels concluded his letter

with: "While these facilities will take time to wind their way through the necessary processes, it is clear that waste-to-energy is on the rise in the United States and we will begin to close the gap with our European counterparts."

"Europe tends to focus less on generating electricity and more on district heating and cooling. In Europe, community-based plants primarily feed hot water into buildings, whereas in the United States it is used to generate electricity to feed into the grid," Michaels explained.

Nonetheless, both the EPA and the European Commission's Eurostat estimate that the European Union (EU) annually sends 50 million metric tons to WTE plants while the United States sends about 26 million metric tons. The disparity is less considering that the EU-27 have a population of nearly 500 million and the United States about 300 million. The EU also aggressively discourages landfills through taxation while in the United States landfills are still relatively cheap, but getting more expensive. "When we construct a facility we are in effect competing with landfills. So we have to have a fee that is competitive as well as utilize revenues we get from recycling metals and the energy sales," said Gilman of Covanta's business model.

Covanta broke ground in December for a 40 percent expansion of the plant it operates for the city and county of Honolulu to process an additional 900 tons a day and recently completed a 600 ton per day expansion at the plant it operates in Hillsborough County, Florida. As landfilling continues to present environmental challenges, communities across North America are exploring alternatives.

Maryland recently awarded contracts for two new WTE plants. West Palm Beach, Florida has issued a request for proposals. "We have a community in South Carolina that is interested in a facility and we are talking to the City of Vancouver where we operate their existing WTE facility about a new project where there is no guarantee on waste delivery. The plan is to barge the waste, which is better than long haul trucking. We are essentially saying that whatever you have left over after recycling we will take it. Then the burden of risk is on us to keep the fuel supply going by working with other communities. Increasingly, it's about working with groups of communities," said Gilman.

It appears that countries and communities with more progressive recycling programs better understand the interrelation of energy production, recycling and effects on the environment. "The communities we serve have recycling programs with greater recovery rates than the United States national average. Some communities we serve like Marion County, Oregon have a recycling rate over 60 percent and a target of 70," Gilman explained.

More advanced municipal recycling operations do a good job of separately recovering plastic, paper and metal, but invariably some of these materials wind up in the garbage going to WTE plants – a composition of roughly two-thirds biomass and one-third fossil based. The plants use waste as fuel to recover the energy value. In the process, the original volume is reduced to a 10 percent residue. Covanta calculates its residue at 22 percent ash, which is landfilled, and 78 percent metal that is recycled. The Energy Recovery Council estimates

that over 700,000 tons of ferrous is recovered from United States WTE plants annually. But there is a trend towards more nonferrous recovery.

Gilman told us about metals at Covanta. "We process about 20 million tons of municipal solid waste every year. About 98 percent of that waste has ferrous recovery and about 60 percent has nonferrous recovery. For 2010 we project to do about 15 thousand tons of nonferrous and about 430 thousand tons of ferrous. Of waste by weight going through our plants it's about 2.6 percent metals."

Water heated by combustion is converted into steam that drives turbines to generate electricity. Using a multi-step pollution control system, WTE plants employ scrubbers to control acid gas, fabric filters to control particulate, selective non-catalytic reduction to control nitrogen oxides and carbon injection to control mercury and organic emissions to meet strict standards. Covanta claims that it operates, on average, at about 80 percent below permitted levels.

The Energy Recovery Council said that for every ton of waste processed in a WTE plant nearly one ton of greenhouse gas (GHG) is avoided. This calculation is complex, but based on the EPA's Municipal Solid Waste Decision Support Tool, modern waste-to-energy plants help reduce greenhouse gases three different ways:

1. When a ton of solid waste is delivered to a waste-to-energy facility, the methane that would have otherwise been generated in a landfill is avoided. While some landfill methane is collected and burned to generate electricity, the vast majority is emitted into the atmosphere.

2. For every megawatt of electricity generated through the combustion of solid waste, a megawatt of electricity from a conventional coal or oil-fired plant is avoided, creating a net savings of GHG emissions.

3. A modern WTE facility separates ferrous and nonferrous metals, which are recycled. This is more energy efficient than mining and processing virgin materials, saves the required energy and avoids GHG emissions.

There are other pluses. For every ton of domestic waste processed, the United States avoids the need to import one barrel of oil, or mine a quarter ton of coal. Since WTE plants are usually located near large metropolitan areas with high volume waste generation, shorter hauls are required. This reduces costs for long-distance trucking, highway congestion and transportation emissions.

Covanta instituted a preventative program two years ago to help keep mercury out of solid waste. By working with the communities it serves, the company offers a \$5 gift card to consumers who turn in mercury thermostats, or elemental mercury. In 2009, over 500 pounds of mercury was preempted from their WTE plants.

With tipping fees rising, more complex and costly EPA landfill GHG regulations in the offing and the high costs of transportation, it seems a waste to waste solid waste when WTE is a proven green technology that is becoming cleaner as it progresses.

In this exploration of waste to energy it is apparent that the industry and government agencies need to better inform the public that WTE is one of the more intelligent environmental choices.

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# Community improvement grants awarded to Keep America Beautiful affiliates by The UPS Foundation

The UPS Foundation awarded 16 Keep America Beautiful (KAB) affiliates \$10,000 community improvement grants each, supporting programs across the country that address litter prevention, waste reduction, recycling, beautification and community greening. The projects will take place during 2010 and into early 2011.

The awards were presented to KAB affiliates in recognition of their volunteer initiatives with local UPS locations throughout the United States.

The winning KAB affiliates and a description of their UPS Foundation-supported projects are:

Keep Austin Beautiful's "Event Recycling, Play as you Throw" initiative provides an easy recycling bin lending system to collect event recyclables that would otherwise end up in a landfill. Funding will support on-site education about waste reduction and proper disposal of materials.

Keep Blackstone Valley, Rhode Island Beautiful is overseeing the Keep North Smithfield Clean & Green Program, a litter prevention education effort working with local food establishments and convenience stores.

Keep Charleston, South Carolina, Beautiful's Green Spaces Recycling Program will install permanent trash and recycling receptacles in every City park. The presence of permanent trash and recycling stations inside these parks will reaffirm the City's goal of creating a clean, beautiful, sustainable community by encouraging litter prevention and waste responsibility.

Keep Cincinnati Beautiful's "Future Blooms" program addresses the visual blight of boarded up buildings by painting windows and doors on the boarded up windows and doors, immediately changing the aesthetics around the area. Additionally, vacant lots are enhanced by defining additional "Future Blooms" spaces with fencing and landscaping.

Keep Dodge City Beautiful, Kansas, will increase collection services at its Civic Center recycling drop-off location by adding two recycling roll-off containers and using the existing bins and trailer at a new drop-off location in south Dodge, expanding their collection capabilities at both locations.

Keep Dorchester County Beautiful's, South Carolina, Waste Reduction Recycling Education Program teaches children about environmental awareness and recycling. One aspect of the program is "Recycling Troopers," which involves elementary school student volunteers, who are identified as Recycling Troopers, and have the ability to issue Gold Stars for classroom recycling. The grant will expand the program beyond the existing 25 participating schools.

Keep Grand Prairie Beautiful, Texas, will partner with the Northeast Neighborhoods and/or Shady Grove Church, to build a new Community Garden in the Dalworth neighborhood. With the help of their local Eagle Scouts, they will build 40 raised beds. Food grown in

the raised beds will either be kept by the participating gardeners or donated to People That Care, a local food ministry.

Keep Guntersville Beautiful, Alabama, will establish an outreach program to stop Lazy Individuals Trashing The Environment Regularly (LITTER) on Lake Guntersville. The lake serves as the location for professional fishing tournaments and wakeboard competitions throughout the year, and is also home to a 69,000 acre state park. The program will provide free portable solid waste containers to recreation and transient boaters.

Hot Springs/Garland County Beautification Commission, Arkansas, will launch the "Save Our Waters - Cage the Plastic" program to reduce litter in high traffic areas such as parks, beaches and tourist attraction settings through a comprehensive demonstration project that will establish new drop-off sites, monitor the effectiveness of these sites, and launch a new publicity campaign.

Keep Indianapolis Beautiful's Project Green Schools engages youth in environmental service-learning projects. Project Green Schools works with Indianapolis schools to create outdoor "classrooms," engaging youth in their environment, and teaching them the importance of protecting it for the future.

Keep Jackson Beautiful, Tennessee, along with the City of Jackson and countless contributors and volunteers, established Liberty Garden as a living memorial in honor of the fallen of September 11. Through the grant, KJB will install a "Nature Explore Classroom" within Liberty Garden, with the goal of promoting family interaction and reconnecting children with nature.

Keep The Midlands Beautiful's, South Carolina, new Lose the Baggage program seeks to significantly increase the use of reusable shopping bags by residents of the City of Columbia, Lexington County and Richland County.

The primary objective is to reduce the amount of plastic bags used by Midlands residents by at least seven million bags a year, which would represent roughly one out of five of residents making the switch from plastic to reusable bags.

Keep Greater Milwaukee Beautiful will create an education and awareness campaign - "Put It Here" - that addresses littering behavior in over 140 parks and parkways totaling nearly 15,000 acres in the metro-Milwaukee area. The project adds litter-free and recycling messaging to the picnic reservation process, and will

also create a PSA featuring community leaders and familiar park locations.

Keep Smyrna Beautiful, Georgia, will build a half-acre community garden in a new park that is currently being developed at the old City "dump." The goals of the project are to create an attractive, functional community garden site with adequate access and water that will be large enough to accommodate the community's immediate needs, with room to grow.

Keep Sugar Land Beautiful's, Texas, "Planet Earth Cart," is stocked with environmentally-themed fiction and nonfiction books, games, DVDs, puppets and hands on activities that may be incorporated into lesson plans by educators. The materials found in these carts cover litter prevention, waste reduction, recycling, reuse, water conservation, runoff pollution, gardening, beautification, butterflies, birds, and much more.

Keep Tularosa Beautiful will use its grant funds to create a community park and recreational facility behind the west side of Tularosa which will allow families a grassy, shady place to play. The first phase of this project will include installing an irrigation/sprinkler system, planting several shade trees, and shrubs.

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# ON TOPIC — Q & A

by Irwin Rapoport

## Utility power from alternative sources

More and more technologies are being developed to convert trash into energy – gases and electricity – and these systems are slowly being installed in communities to help to reduce the costs of dealing with trash.

Existing models to deal with waste are being challenged, but like many new products or processes, it takes time to establish working models that meet the criteria of municipalities that will eventually replace traditional models.

American Recycler spoke with Conrad Oakey, marketing specialist for Owing Mills, Maryland-based NovaTech, LLC, a company that specializes in electric utility and industrial process automation.

**With landfilling garbage becoming more expensive, especially along the east and west coasts, how important is it for cities and counties to develop alternative means of dealing with their recyclable materials and the residual materials?**

**Oakey:** On the policy side, it is important for the people who live in cities to understand and decide on the policies they're going to insist on from their governments. Economically, the price per-ton of tipping fees going into landfills is really like the price of oil, only more so going down the line. It's going to drive investment in conversion technologies and other solutions.

The first few pilot scale systems that can demonstrate cash positive operation after running for a few years will show which technologies and approaches make real world sense.

**Are technologies to maximize recyclables processing for reuse and power generation available today?**

**Oakey:** Pyrolysis and anaerobic digestion are pretty mature in certain applications. There is a lot of research going on in algae. The technology is available and a lot of them are at the point that we just need the first project phase and towns that select good innovative projects that will breakout and will be successful stories. It should be good for the towns if they become the places that learn how to convert their waste into revenue, learn what policies go with those technologies and can create local employment with them. Then they will have opportunities to educate other towns around them and be leaders in sustainability.

Three or four towns could pool their resources to install a system. If you take pyrolysis as an example, you might need 100 tons of combustible waste per day to have enough incoming fuel stock to meet a utility contract. Power generating operations require a certain volume, so whatever that number is, if these towns could consolidate their capital together into a shared facility that works too. A shared set up of upstream sorting policies (*i.e.*, organics, glass, metal and all else) and a central collection and conversion point for all the partners could be selected. The vehicles that collect the garbage for that site can even be converted to run on the syn gas (or extracted hydrogen) that is produced at that facility. Depending on the state and how the waste conversion technology is classified, there may be renewable energy credits to help pay for the investment.

**What types of technologies and systems should municipalities invest in? Can future improvements be incorporated?**

**Oakey:** An example that comes to mind would be a town that has an existing incinerator with their collection practices in place and they want to turn that incinerator into an energy source. That would mean updating some equipment and re-engineering the facility. The policy points vary, but pyrolysis has been classified as recycling technology, so it would enable those that already have incinerators to look at alternatives and additional incentives.

**Are technologies like pyrolysis expensive to purchase or is it a question of a large initial outlay that pays for itself in a few years and then generates a revenue for the municipal operator? What steps would municipalities need to take to set up the infrastructure needed?**

**Oakey:** It is an investment and there is supposed to be a payoff down the line. It's very individual to local municipalities as to what combinations of technologies and incentives are going to work to help pay for it, but there are a lot of people trying to figure out how to do these projects and project developers will look at individual situations and tell you what could work in your situation.

In terms of the actual processes, there are probably some separation issues. In Seattle I understand that that if you put anything that is vegetable in your regular garbage, they can give you a sizeable fine. A lot of conversion technologies that are available do better when the waste stream is of high BTU content and not wet, so a municipality would probably want to take food waste to an anaerobic digester and take combustible garbage to a pyrolysis unit, with hard metals and glass sent to a recycling operation, so upstream separation and separation at the facilities themselves is an important and somewhat hard to quantify ongoing cost. What are the insurance risks involved in having people hand-sift waste streams? That will be an additional cost.

**Eco Soul Ventures LLC is working with its local partners in French Polynesia to establish waste to energy systems in Tahiti that will extract energy from the local solid waste streams. What type of system will be installed?**

**Oakey:** It is a phased project that is in the engineering stage at this time. Phase I is a solar PV installation on a purpose built structure that will house the pyrolysis unit in Phase II. The revenue from the solar system will help support the waste to energy system in Phase II that may be expanded over time to meet local material flows.

You can also utilize carbon dioxide from the pyrolysis unit and feed it to algae in closed bio-reactors to produce fuel. It's a complimentary system that is part of an integrated approach. Tahiti is a natural to become a leader in local power production. The reason that Tahiti and other islands are early candidates for this type of system integration is due to their isolation, they have high fossil fuel energy cost – the majority of electrical power comes from diesel via tanker. Compared to the mainland coal-fired grid, they have a higher cost which is a clear incentive to innovate.

**When do you foresee major American cities abandoning the traditional system of landfilling trash and utilizing alternative methods?**

**Oakey:** When the technology has been proven somewhere and enough people could see that it is environmentally sound, cash positive and does not harm local employment – that an existing infrastructure is being repurposed. When that sinks in, the opportunities will present themselves.

## USA Gypsum celebrates 10 years of drywall recycling



Pennsylvania DEP Secretary John Hanger (center) greets visitors on a tour of the USA Gypsum plant located in Reinholds. The company recycles drywall which is then used in areas of agriculture such as animal bedding and fertilizer.

USA Gypsum, one of the only drywall recycling plants in the Commonwealth, isn't waiting for the recycling wave to hit the drywall industry. Terry Weaver, owner of the facility, isn't one to wait for things to happen.

In 10 years USA Gypsum has grown from 2 employees to 8 with 2 dedicated subcontractors. The amount of drywall that is recycled at the plant jumped from 300 tons per year to more than 20,000 tons, saving much needed space in already overloaded landfills. Weaver has also worked hard to keep the plant and operations green and on par with other recycling operations.

USA Gypsum is the recipient of the first General Permit in the Commonwealth. The permit allows the company to continue to operate as a drywall recycler and to use the recycled material for agricultural purposes, creating a cooperative effort between agriculture and the environment.

"The permit is the first to be given in Pennsylvania and we are very grateful to the Department of Agriculture

(PDA) and the Department of Environmental Protection (DEP) for allowing us this distinction," said Weaver. "Through our program we have been able to recycle about 120,000 tons of drywall over the past five years. Not only has this significant amount of waste been removed from the landfill waste stream but it has also been repackaged for beneficial use by agriculture."

The recycled drywall is sold as a soil amendment and as a fertilizer. It is also useful as animal bedding.

Dairy cows use an estimated 500,000 tons of bedding in Pennsylvania per year.

"We're getting a large response to recycling drywall. Because it can be used in so many other ways, we are also looking at expanding the plant in the near future," said Weaver. "The additions to our plant will also have the same green building certifications as our original building.

## Steel mill dust

■Continued from Page 1

how established by Nippon Steel on the recycling and effective utilization of steel dust.

In addition to the new business, Nippon Steel will be able to use its existing dust recycling plants at its Hirohata Works to recycle steel mill dust generated from the steelmakers, including alliance partners, located in the Kansai region.

Nippon Steel and Kobe Steel will use steel mill dust and iron ore fines from their steel mills as raw materials to recycle iron into direct reduced iron (DRI) and recover zinc. For this pur-

pose, a joint venture company has been established within Nippon Steel's Hirohata Works.

The name of the joint business is Nittetsu Shinko Metal Refine Co., Ltd. with Nippon Steel owning 70 percent and Kobe Steel 30 percent.

Nittetsu Shinko Metal Refine will construct a direct reduction plant utilizing Kobe Steel's FASTMET® Process within Nippon Steel's Hirohata Works. Nittetsu Shinko Metal Refine will recycle the steel mill dust it receives and use it to produce DRI. The DRI will be supplied to Nippon Steel and Kobe Steel, with a portion also going to Sanyo Special Steel Co., Ltd., a group company of Nippon Steel.

### Moving soon?



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## Illinois increases mercury thermostat collection

The Illinois House passed the Mercury Thermostat Collection Act (SB 3346). This caps a three year effort to get both houses of the General Assembly to pass legislation that will improve the collection of mercury-containing thermostats used to activate heating and cooling equipment. The bill includes a ban on the disposal of the thermostats as well.

This year, the Illinois Environmental Council and the Illinois Environmental Protection Agency joined with the Environmental Law & Policy Center and Sen. Heather Steans, the bill's chief sponsor, to overcome the thermostat manufacturers' opposition to previous legislation. The Mercury Policy Project provided invaluable support as well.

The breakthrough in the latest round of negotiations with the manufacturers came when their representatives agreed for the first time to meet annual collection goals and to become subject to new legal requirements if those goals are not met. For example, the Illinois EPA may require the manufacturers to start offering a \$5 for

each thermostat turned in as a way to increase collections.

Last year, the manufacturers collected 4,149 mercury thermostats under a voluntary program. This bill sets the collection goal for 2012 through 2014 at 15,000 thermostats for each year. The Illinois EPA may set higher collection goals for years after 2014.

Illinois enacted a ban on the sale and manufacture of mercury fever thermometers and novelty items in 2003. A ban on most mercury-added switches and relays in consumer products and a prohibition on mercury use in classrooms were passed the following year. Those laws were followed by a ban on the use of mercury as a preservative in pediatric vaccines (2005) and new requirements for the recovery of mercury-containing auto switches (2006). Illinois banned the sale and distribution of mercury-containing measuring devices and thermostats in 2007. Most recently, the General Assembly passed a ban on mercury-containing weights used to balance vehicle wheels.

## James L. Wainscott, awarded 2010 Gary Memorial Medal

The American Iron and Steel Institute (AISI) announced that James L. Wainscott is the 2010 recipient of the Gary Memorial Medal, the Institute's highest honor. Wainscott, AK Steel Corporation chairman, president and CEO, was recognized with the award at the AISI 118th General Meeting.

In presenting the award, 2010-11 AISI chairman Daniel R. DiMicco, chairman, president and CEO of Nucor Corporation, praised Wainscott for providing the commitment and leadership that was so significant during a period of economic crisis brought on by the global recession.

Established in 1927, the Gary Medal is named for Judge Elbert H. Gary, the first president of AISI. The medal recognizes an individual for his or her remarkable lifelong contributions to the North American steel industry.

Wainscott has served the steel industry for nearly 30 years, beginning his steel career with the former National Steel Corporation where he held a number of executive level positions. In 1995, Wainscott joined AK Steel as vice president and treasurer and was named chief financial

officer in 1998. In 2003, he was named president, CEO and a member of the board of directors of AK Steel. In January of 2006, he was named chairman of the board of directors. Wainscott is also a member of the board of directors of the Parker Hannifin Corporation.

Under Wainscott's leadership, AK Steel has achieved a dramatic turnaround to become a financially solid and globally-competitive steelmaker.

Wainscott recently served as AISI's 2009-2010 chairman, and previously served as the chairman of the Institute's policy and planning committee and as chairman of its finance committee.

In addition to his service to AISI, he is a member of the Business Roundtable (and is a past board member of the Specialty Steel Industry of North America). He is vice chairman of the board of directors of the Good Samaritan Hospital Foundation (Cincinnati), a member of the campaign board of Ohio Cancer Research Associates, and a member of the Executive Advisory Board of Ball State University's Miller College of Business.

## Dialight partners with Veolia to offer HID lamp, ballast recycling

Dialight announced that it has partnered with Veolia Environmental Services to offer high-intensity discharge (HID) and street light fixture and lamp recycling for commercial facilities and municipalities that make the switch to Dialight's more energy-efficient and environmentally-friendly LED lighting solutions.

As business and municipalities change out traditional fixtures in buildings, warehouses, streetlights and parking lots to take advantage of the cost and energy

savings offered by LED technology, the discarded fixtures and lamps must be recycled or disposed of properly. Most contain hazardous materials – mercury – that not only make them an environmental liability, but also expose the company or municipality to the risk of penalty for improper handling and disposal.

Veolia's processing system ensures that customers who change out fixtures will be able to minimize cost and maximize efficiency.

## ELECTRONICS

### Traffic signs made from recycled e-waste plastic



Image Microsystems have received their first approval by the Texas Department of Transportation (TxDOT) for a product made from their MicroStrate™ material.

"We know that every pound TxDOT sends to a landfill costs Texas taxpayers," explained Woody Raine, PE, TxDOT's recycling program coordinator. "That's why we're always on the lookout for recycled-content products that meet our strict performance requirements at competitive prices. Along the way, we don't mind taking a little credit for helping make landfills last longer

and supporting programs that employ more Texans," added Raine.

Patent pending MicroStrate™ is a versatile material made completely of recycled e-waste plastic. Image Microsystems' proprietary manufacturing process combines "dirty" plastic found in spent printer cartridges and computer or printer housings and converts it into resilient, cost-effective, earth-friendly products. Dirty plastic is considered valueless in the recycling supply chain and as a result frequently ends up in landfills.

### Electronics collection increased

The National Center for Electronics Recycling (NCER) announced the 2009 per capita collection index (PCCI) for electronics recycling programs as an increase of 8 percent over 2008. This compares to the 2008 index value of 7 percent over 2007. The PCCI is an annual measure of collection volumes of used electronic equipment in six programs across the United States. The increase seen in the 2009 PCCI would have been higher if it

had not been for a shift in CRT glass markets causing delays in submitting claims.

A rising PCCI indicates an increase in the collection of e-waste across the programs included in the index and suggests a similar trend nationwide. The jurisdictions included are the states of California, Maine and Delaware; a municipality in Hennepin County, Minnesota and municipalities in Branford, Connecticut and Frederick County, Virginia.



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## WASTE

### EPA proposes mercury limits for boilers and incinerators

The United States Environmental Protection Agency (EPA) has issued proposals that would cut mercury emissions by more than half and would significantly cut other pollutants from boilers, process heaters and solid waste incinerators.

The proposed rules would define some "non-hazardous secondary materials" as solid waste, which would require units that burned those materials to be defined under section 129 of the Clean Air Act (CAA) as solid waste incineration units, rather than as fuel under less stringent standards for boilers under section 112 of the CAA.

EPA is also proposing to identify which non-hazardous secondary materials would be considered solid waste and which would be considered fuel. This distinction would determine whether a material can be burned in a boiler or whether it must be burned in a solid waste incinerator. The agency is also soliciting comment on several other broader approaches that would identify additional non-hazardous secondary materials as solid waste when burned in combustion units.

The limits would take effect after a 45 day public comment period.

### New York Port Authority board to acquire and redevelop New Jersey rail facility

The Port Authority Board of Commissioners authorized the purchase and redevelopment of Greenville Yards, a century-old rail yard in Jersey City, New Jersey. This will serve as the lynchpin to removing up to 360,000 trash trucks annually from trans-Hudson crossings and New Jersey highways by moving New York City's sealed containerized solid waste and other commodities by barge and rail when appropriate facilities are completed by 2013.

Greenville Yards forms the western terminus for New York New Jersey Rail LLC, which is owned by the Port Authority and operates the last cross-harbor car float system on the Hudson River. Under this system, freight is loaded on rail cars and the cars are moved by barge from Greenville to Brooklyn, New York, where they are either delivered to local customers or handed over to another railroad to reach their destination.

The board authorized \$118.1 million for the overall project, part of which will go toward the purchase of approximately 47 acres of upland property and 72 acres of riparian rights at Greenville, and part of which will go toward the existing rail car float system operating

between Greenville Yards and sites at 51st and 65th streets in Brooklyn, New York. Funding for this authorization will come from federal and state grants, and Port Authority funds.

A new barge-to-rail facility, to be built at Greenville Yards, will allow for municipal solid waste and other commodities to be barged from New York to New Jersey in watertight sealed containers and taken out of New Jersey by rail. Currently, the majority of New York City's waste is trucked through the Port Authority's Hudson River crossings in unsealed, open-topped trucks with fabric coverings and continues out of state using New Jersey's roads, causing negative environmental consequences, worsening traffic congestion and overburdening the region's bridge and highway infrastructure.

New York City plans to ship an estimated 120,000 to 180,000 containers of solid waste per year through two barge-to-rail transfer points on the western side of the Port of New York and New Jersey. If Greenville is used for this purpose, it would handle about half of the container stream, with the balance going to the other selected facility. In order to meet this demand, the Port Authority will

make improvements to decades-old track and infrastructure, as well as construct a modern barge-to-rail transfer facility. The board action will allow these improvements to move forward.

The purchase of Greenville Yards and the rehabilitation of track and infrastructure there also provides the Port Authority with major benefits, including reduced costs to maintain its bridges from the wear and tear caused by daily truck traffic. Each year, the Port Authority spends more than \$30 million maintaining the deck of the George Washington Bridge upper roadway, due primarily to truck traffic. In addition, the reduction of up to 360,000 trash truck trips a year will significantly reduce the levels of harmful emissions currently generated by truck shipments.

The barge-to-rail facility to be built at Greenville Yards will connect two railroads – CSX Transportation and Norfolk Southern Railway. Since freight trains are not allowed in Amtrak's North River Tunnels, and the Poughkeepsie Bridge was closed in 1974, the cross harbor car float system is the only Hudson River rail freight crossing within 140 miles of New York City.

### Waste Management first quarter 2010 earnings improve

Waste Management, Inc. announced financial results for its first quarter ended March 31, 2010. Net income for the quarter was \$182 million, or \$0.37 per diluted share, compared with \$155 million, or \$0.31 per diluted share, for the first quarter of 2009. This is an increase in earnings per diluted share of over 19 percent. Revenues for the first quarter of 2010 were \$2.93 billion compared with \$2.81 billion for the same 2009 period.

The Company noted several items that impacted results in the 2010 and 2009 first quarters. Results in the first quarter of 2010 included a \$17 million after-tax charge related to the partial withdrawal from a Teamsters' under-funded multi-employer pension plan. Results in the first quarter of 2009 included a \$23 million reduction in net income due to charges related to the restructuring announced in February 2009, and a \$30 million reduction in net income related to the abandonment of a revenue management system. Excluding these items, net income would have been \$199 million, or \$0.41 per

diluted share, in the first quarter of 2010 compared with \$208 million, or \$0.42 per diluted share, in the first quarter of 2009.

David P. Steiner, chief executive officer of Waste Management, commented, "We saw further signs of improvement in our business during the first quarter of 2010. Revenue increased over 4 percent compared with the first quarter of 2009, primarily because of improving commodity prices and year-over-year yield increases. And volume comparisons continued to show improving trends."

Some of the key highlights for the first quarter are:

- Revenue increased by 4.4 percent, or \$125 million, in the first quarter.

- Average recycling commodity prices more than doubled in the first quarter of 2010 compared with the prior year period. This favorable year-over-year impact contributed over \$0.06 to earnings per diluted share in the first quarter of 2010, compared with the prior year period, which was consistent with the company's previously announced estimate.

### DSNY runs first-in-U.S. Hino hybrid

Hino Trucks has brought its light-duty diesel hybrid cab-over (COE) to the United States for the first time, providing its hybrid to the New York Department of Sanitation (DSNY).

As part of its initiative to reduce operating costs and greenhouse gas emissions, DSNY has elected to run a Hino diesel hybrid COE for parts delivery. The Hino

diesel hybrid COE has a gross vehicle weight rating of 14,500 lbs. and a 16' van body.

"The Hino hybrid has been running a dedicated route supplying our service centers and has been performing very well," said Rocco DiRico, deputy commissioner of support services for DSNY.

### Republic Services' drivers honored for quality service

Three drivers for Republic Services, Inc. were honored by the Environmental Industry Association (EIA) and named "Driver of the Year" for their safe and exemplary service. EIA confers three awards each in the small and large company categories and one award in the public category. Republic's drivers swept the large company category.

Republic's award-winning 2010 Drivers of the Year are:

Rodney Poe, a front load truck driver for Republic Services, Inc. in Indiana-Large Industrial Category. Poe has been driving trucks for 33 years, the last 25 years with Republic Services, Inc., and has not had an accident. Today, he drives a roll-off truck on an industrial route with about 50 stops per week and an average of 569 miles of city driving in a heavily populated area.

Anthony Lucious, a rear load truck driver for Republic Services, Inc.-Southern Nevada, Large Residential Category. With an average of 280 miles per week of city driving in a heavily populated area and about 6,500 stops, Lucious has a 22 year, accident-free driving record for Republic Services.

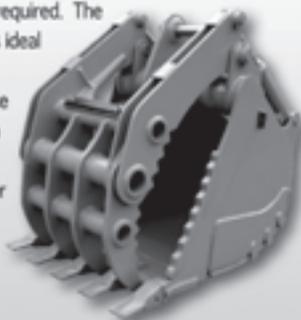
Kenneth Aldrich, a rear load truck driver for Republic Services, Inc.-Illinois, Large Commercial Category. With a 15-year, clean driving record at Republic Services, Aldrich drives city, suburban and rural routes, averaging about 825 stops each week and with 625 miles of driving.

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## WASTE

# 193 commercial trash trucks taken out of service in Pennsylvania

The Pennsylvania State Police, in cooperation the Department of Environmental Protection, placed 193 trash trucks out of service during a two-day enforcement effort that focused on commercial haulers, Commissioner Frank E. Pawlowski announced.

"During this operation on June 2 and 3, state police motor carrier enforcement personnel focused their attention on trash trucks and identifying safety defects that can lead to crashes," Pawlowski said. "Inspections were conducted at landfills and waste transfer stations across the state."

Pawlowski said personnel inspected 892 trash trucks and weighed 676 trucks. State police issued 666 citations and 1,235 written warnings. The most common violations were inoperable rear lights and improperly adjusted brakes. Nineteen drivers were placed out of service.

The following is a breakdown, by state police troop area, of the number of inspections conducted, number of vehicles placed out of service, and citations issued by state police during the two-day program. Troops H and T did not participate in the enforcement program.

•Troop A (Cambria, Indiana, Somerset and Westmoreland counties), 114 inspections; 21 vehicles placed out of service; 56 citations;

•Troop B (Allegheny, Fayette, Greene and Washington counties), 105 inspections; 32 vehicles placed out of service; 61 citations;

•Troop C (Clarion, Clearfield, Forest, Elk, Jefferson and McKean counties), 54 inspections; four vehicles placed out of service; 16 citations;

•Troop D (Armstrong, Beaver, Butler, Lawrence and Mercer counties), 69 inspections; six vehicles placed out of service; 21 citations;

•Troop E (Crawford, Erie, Venango and Warren counties), 23 inspections; seven vehicles placed out of service; 21 citations;

•Troop F (Cameron, Clinton, Lycoming, Montour, Northumberland, Potter, Snyder, Union and Tioga counties), 59 vehicles inspected; 12 vehicles placed out of service; 33 citations;

•Troop G (Bedford, Blair, Centre, Fulton, Huntingdon, Juniata and Mifflin counties), 76 inspections; 14 vehicles placed out of service; 41 citations;

•Troop J (Chester and Lancaster counties), 40 inspections; nine vehicles placed out of service; 21 citations;

•Troop K (Delaware, Montgomery and Philadelphia counties), 119 inspections; 28 vehicles placed out of service; 124 citations;

•Troop L (Berks, Lebanon and Schuylkill counties), 27 inspections; six vehicles placed out of service; 11 citations;

•Troop M (Bucks, Lehigh and Northampton counties), 63 inspections; nine vehicles placed out of service; 34 citations;

•Troop N (Carbon, Columbia, Monroe and part of Luzerne counties), 48 inspections; 12 vehicles placed out of service; 96 citations;

•Troop P (Bradford, Sullivan, Wyoming and part of Luzerne counties), 15 inspections; four vehicles placed out of service; 37 citations;

•Troop R (Lackawanna, Pike, Susquehanna and Wayne counties), 80 inspections; 18 vehicles placed out of service; 64 citations issued.

## Ohio EPA begins landfill capping and closure of A&L Salvage

Ohio EPA and its contractor are beginning a multi-million dollar effort to properly cap and close the A&L Salvage Landfill located in Lisbon, Ohio.

R. B. Jergens Contractors of Vandalia, Ohio, is mobilizing equipment at the former construction and demolition debris landfill and will begin significant earth-moving work. The goal is to have the landfill's permanent cap completed by Thanksgiving.

Over the next six months, Jergens and its sub-contractors will initiate a series of tasks to stabilize the landfill and permanently cap the 42 acre disposal area. Those tasks include: covering hotspots with clay; relocating waste to achieve a proper grade; installing a gas collection system to control odors; and covering the landfill with a plastic cap, soil and vegetation to keep water away from the waste and control runoff. The project is estimated to cost \$3.2 million, which will be provided by the landfill's owners.

Ohio EPA carefully considered project bids from four companies before selecting R.B. Jergens to do the work. The Agency believes Jergens proposed the best overall design for site closure, limiting landfill odors and controlling a suspected subsurface fire. The company also has substantial experience working on landfills.

Relocating waste in the disposal area is expected to take 14 days or less in June and/or July.

During this time needed to relocate the waste in the disposal area, the community may experience periods of increased landfill odors. When moving waste, Jergens may work beyond their normal 10 hour day to minimize the time the waste is exposed and causing odors.

To protect workers and the community during the project, Jergens must comply with a health and safety plan, and Ohio EPA will continue to monitor air emissions around the landfill.

## Industry association awards scholarships

The Environmental Industry Associations (EIA) Women's Council recently announced its 2010 scholarship winners. The EIA Women's Council scholarships are available to applicants that are employed by, or dependents of persons employed by the members of the two EIA sub-associations: the National Solid Wastes Management Association (NSWMA) or the Waste Equipment Technology Association (WASTEC). Applicants must be seeking undergraduate or graduate education with intent to pursue studies that will promote a career in the environmental industry.

The EIA Women's Council awarded four \$2,500 scholarships to the following students for the next academic year:

**Lindsay Foster-Drago (Portland, Oregon):** Foster-Drago is the first

repeat recipient of a Women's Council scholarship. She is working full-time for Keith Manufacturing Co. while completing an MBA at Marylhurst University. The granddaughter of the inventor of the Keith Walking Floor System, Lindsay is training to someday take the helm of the family business.

**Anna Oleksiewicz (Urbana-Champaign, Illinois):** Oleksiewicz is a high school senior who will be attending the University of Illinois studying electrical engineering in the fall. The child of a Navistar, Inc. engineer, Anna is fluent in three languages, is a distance runner, auto mechanic and mountain climber. She has already applied for a provisional patent for a collapsible bicycle carrier that can be used for air travel.

**Jack Stern (Los Angeles, California):** Stern is a dean's list student at the University of Southern California where he is studying civil engineering. His mother is a communications manager at Waste Management, Inc. When not in school, Jack fights forest fires and is a certified first responder for Marin County's Fire Department.

**Kristin Van Kampen (Grand Rapids, Michigan):** Van Kampen is the daughter of a Republic Services, Inc., employee. Finishing her second year in biology and environmental studies at Calvin College in Michigan, Kristin is devoted to protecting worldwide ecology. After studying greenhouse management at her college, she travelled to Costa Rica to study biodiversity and apply her skills.

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## Casella Waste announces fourth quarter and fiscal year 2010 results

Casella Waste Systems, Inc. reported financial results for its fourth quarter and 2010 fiscal year, and gave guidance on its 2011 fiscal year.

Highlights include:

•Revenues were up 11.5 percent from the same quarter last year, with 6.7 percent growth in the Solid Waste group, the first quarter of Solid Waste volume growth in eight quarters and the eighth consecutive quarter of pricing growth.

•Solid Waste volume growth in the quarter driven by higher landfill volumes and sequentially improving collection volumes; Recycling commodity prices

strengthened sequentially for the fifth straight quarter.

•Adjusted EBITDA for the quarter was \$29.1 million, up \$3.8 million from the same quarter last year.

•Adjusted EBITDA margin for the quarter was 22.3 percent, up 80 basis points from the same quarter last year.

•Fiscal year 2010 guidance ranges achieved with revenues of \$522.3 million, Adjusted EBITDA of \$123.6 million, and free cash flow of \$0.8 million.

For more complete details,  
view this article on  
[www.AmericanRecycler.com](http://www.AmericanRecycler.com).

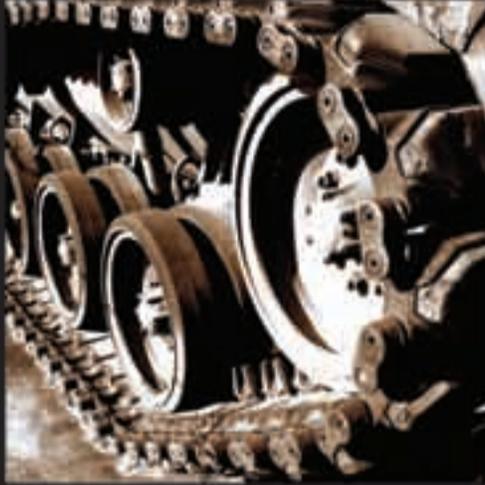
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## METALS

# Industry leaders recognized for lifetime achievement

The Institute of Scrap Recycling Industries, Inc. (ISRI) bestowed Lifetime Achievement Awards on two outstanding industry leaders during its 2010 Annual Convention and Exposition in San Diego. This year's recipients are Tom Salome and Marvin Siegel.

Salome has spent a lifetime in Waco, Texas, growing one of the most successful scrap recycling businesses in the region, and emerging as a distinguished community leader. His success has always been driven by a passion for learning. He was the first male in his family to attend college, graduating from Baylor University with a bachelor's degree in business administration in 1953. He continued his business studies, pursuing a master's degree in economics before entering the Air Force during the Korean War.

In 1957, Salome began working for Melvin Lipsitz, owner of a small scrap yard, M. Lipsitz & Co. Lipsitz became his mentor and, at age 25, with no previous experience in the scrap business, Salome embarked on a 53-year career in the scrap industry.

As the company expanded, he was rewarded with an increasing ownership share and a greater role in management. During this period, Salome also began his lifelong participation in the industry's associations, beginning with the Institute of Scrap Iron and Steel and

later ISRI. During the past five decades, he has held numerous leadership roles in ISRI and its predecessor organizations, including board member, every leadership position in the Gulf Coast Chapter, ISIS finance committee chair, and ISRI convention chair.

Siegel built a thriving scrap business in Spartanburg, South Carolina. Unlike many recyclers who are active in a family scrap business from a young age, Siegel's early education and career was in public accounting, working in the textile business. In 1977, he left textiles to become a partner in a small scrap metal operation called Spartanburg Iron & Metal Corporation.

Ten years later, Siegel bought the company and, through a series of highly successful mergers and acquisitions, saw it grow into one of the largest scrap processing and recycling companies in the industry. At his retirement in 2009, Marvin Siegel was executive vice president of Omnisource Southeast, a business unit that included over 30 yards with seven shredders in five different states.

In the 1980s, Siegel became active in the industry associations ISIS and NARI, and later ISRI. He became involved in chapter and national committee work, serving as chapter president and a member of the ISRI board and executive committee. His distinguished service as chair of the ISRI legislative affairs committee was invaluable during the struggle to achieve relief from Superfund liability, resulting in the passage of the Superfund Recycling Equity Act in 1999.

# ISRI elects new executive team

The Institute of Scrap Recycling Industries, Inc. (ISRI) board of directors has elected a new leadership team to direct the association over the next two years.

The new leadership team, elected by the ISRI board is composed of: John Sacco, chairman; Jerry Simms, chair-elect; Doug Kramer, vice chair; and Mark Lewon, secretary-treasurer.

Sacco has a lifetime of experience in the scrap recycling industry. After graduating from the University of Southern California, he joined his father in the scrap business. Sacco contributed to the inception of Sierra International Machinery in 1987. Two years later, he was appointed president and continues to lead the company known as a worldwide leader in scrap processing equipment. The company also operates two scrap processing facilities with divisions in demolition and environmental abatement. Sacco also has served in various ISRI's leadership positions, including president of the Southwestern Chapter, chairman of the Members Services Committee, and chairman of the Chapter Presidents.

Simms has been in the scrap recycling industry since 1978 when he joined Atlas Metal & Iron Corp. in Denver where he has been involved in scrap purchasing and aluminum brokerage operations for 30 years. For the last several years, Simms has served as the company's director of Environmental and Legislative Affairs as well as general manager of Atlas Metal

Sales, the corporation's nonferrous service center. He is corporate vice president, sales.

Simms has a long record of service to ISRI in various positions, including chairman of the Government Relations Committee, chairman of the Image Task Force's Membership Criteria Subgroup, chairman of the SREA Task Force, and chairman of the Mercury Task Force.

Kramer is president of Kramer Metals, Inc., which operates three scrap metal recycling facilities in downtown Los Angeles, California. Kramer joined his family's firm in 1986 after graduating from Whittier College with Bachelor of Arts degrees in Political Science and Sociology and was appointed president of the company in 2000.

Lewon's family has owned and operated Utah Metal Works since 1955. He began working summers for the company during his high school and college years, learning the business from the ground up. Lewon worked for two years for LMC Metals, San Jose, California, which was purchased by the Sims Group. Lewon returned to Utah Metal Works in October 1988, where he now serves as president. Lewon has been active in ISRI since 1994, being elected secretary/treasurer of the Rocky Mountain Chapter, and serving as convention chairman, nonferrous division chair, and a member of the audit and executive committees.

*A man told his doctor he wasn't able to do all the things around the house like he used to. When the examination was complete, he said, "Now Doc, tell me in plain English what is wrong with me."*

*"Well in plain English," the doctor replied, "you're just lazy."*

*"Okay," said the man. "Now give me the medical term so I can tell my wife."*

# Novelis reports record financial results

Novelis Inc. reported net income attributable to its common shareholder of \$405 million for fiscal year 2010, a significant increase when compared to the net loss of \$1.9 billion reported for the same period a year ago.

Shipments of aluminum rolled products totaled 2,708 kilotonnes for fiscal 2010, a decrease of 2 percent compared to shipments of 2,770

kilotonnes in the previous year, driven by softer end-market conditions in most regions during the first half of the year.

For the fourth quarter, shipments were 716 kilotonnes, an increase of 18 percent from shipments of 605 kilotonnes in the fourth quarter of the previous year, primarily due to strong growth in North America, Europe and Asia. The

fourth quarter of 2010 represented the first quarter since the economic downturn that shipments grew in all four regions year-over-year.

Net sales for fiscal 2010 were \$8.7 billion, a decrease of 15 percent compared to the \$10.2 billion reported in the same period a year ago, a result of lower aluminum prices and softness in the company's end-markets in the first half of the year.

Net sales for this year's fourth quarter were \$2.4 billion, a 25 percent increase when compared to the fourth quarter of last year, driven primarily by higher aluminum prices and stronger demand.

Liquidity improved to over \$1 billion at the end of fiscal year 2010, representing an increase of 163 percent from \$390 million in liquidity reported at the end of fiscal year 2009.

For fiscal 2010, free cash flow was \$355 million, representing a substantial increase when compared to the negative free cash flow of \$352 million for fiscal 2009, driven by stronger performance, working capital improvements and controlled capital expenditure levels.

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# METALS

## Metal scrapyards destroyed by fire in Dayton, Ohio

Franklin Iron & Metal Co., located in Dayton, Ohio was the site of a massive fire in May.

Thick plumes of smoke and flames 50 to 60 feet high could be seen from miles away.

The blaze started in a 50 foot pile of an estimated 3,000 junk cars.

Firefighters doused the scrap metal mountain with thousands of gallons of water. They also used 1,200 gallons of fire suppression foam.

Chief Herbert Redden of The Dayton Fire Department said, "This is an operation where you have cutting and welding. Depending on their staffing level, they have had people here cutting and welding till two or three in the morning."

Investigators talked to employees who work at the scrap yard, hoping to figure out what sparked this massive blaze.

Nearly two thirds of The Dayton Fire Department's resources were used in fighting the fire. Several firefighters had just gotten off work, only to be recalled to man other engines and protect the city.

Franklin Iron's general manager, Greg Clouse, said he had no idea what sparked the fire and had no estimate of the cost of the damage.

The fire came two days after a bomb disposal unit from Wright Patterson Air Force Base removed an artillery shell from the scrapyards. Workers found the shell, which was eight inches in diameter and was thirty inches tall. The discovery closed about six blocks around the scrapyards for more than four hours.

## Imports highest in nearly a year

Based on preliminary Census Bureau data, the American Iron and Steel Institute (AISI) reported that the United States imported a total of 2,072,000 net tons (NT) of steel in April, including 1,672,000 NT of finished steel. This was the highest monthly total since January 2009. Annualized total and finished steel imports in 2010 would be 22.1 and 17.5 million NT, respectively.

Key finished steel products with significant import increases in April 2010 compared to March include all other metallic sheet and strip (up 128 percent), reinforcing bars (up 101 percent), oil country goods (up 32 percent), line pipe (up 20 percent) and plates in coils (up 20 percent).

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

	APR 2010	MAR 2010	2010 Annual (est)	2009 Annual	% Change 2010 Annual vs. 2009
SOUTH KOREA	196	110	1,664	1,323	25.8%
JAPAN	91	138	1,276	981	30.1%
GERMANY	86	140	871	495	76.2%
CHINA	60	59	695	1,463	-52.5%
TURKEY	86	49	603	492	22.7%
INDIA	40	60	510	581	-12.3%
AUSTRALIA	34	57	499	285	75.3%
TAIWAN	68	36	447	371	20.5%
All Others	1,011	1,002	10,928	8,189	33.5%
<b>TOTAL</b>	<b>1,672</b>	<b>1,651</b>	<b>17,493</b>	<b>14,178</b>	<b>23.4%</b>

## Harsco cleans up steel site Project is model for future remedial metal sites

Harsco Corporation signed a multi-year environmental services contract valued at more than \$50 million to handle the metal recovery and on-site removal of decades-old slag stockpiles left behind by a former steel manufacturing plant in Gadsden, Alabama.

Under the contract signed with overall site manager, CMC, Inc., Harsco will install and operate an on-site metal recovery and slag processing operation that will process an estimated three million cubic yards of slag materials still remaining from the former Gulf States Steel facility which filed for bankruptcy in 1999.

Harsco will recover the slag's valuable metallic content and process the remaining material so that it can be responsibly recycled or placed in a landfill.

Harsco's operations are expected to create approximately 20 new jobs, all of which the company plans to fill with local hires.

The EPA expects the project to be fully funded by the commercialization of the recovered metals, and considers it a potential model for future cleanup of similar sites throughout the United States.

## Steel shipments decrease in April

The American Iron and Steel Institute (AISI) reported that for the month of April 2010, United States steel mills shipped 7,057,660 net tons, a 7.7 percent decrease from the 7,646,938 net tons shipped in the previous month, March 2010, and a 74.6 percent increase from the 4,042,457 net tons shipped in April 2009.

A month-to-month comparison of shipments shows the following changes: hot dipped galvanized sheet and strip, down 21 percent; hot rolled sheet, down 7 percent; and cold rolled sheet, down 7 percent. Oil Country Goods improved slightly from 177,405 in March to 189,857 in April, a 7 percent gain.

*Grandparents: The people who think your children are wonderful even though they're sure you're not raising them right.*




Commodity		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
#1 Bushelings	per gross ton	\$275.00	\$252.00	\$235.00	\$285.00	\$413.00
#1 Bundles	per gross ton	275.00	252.00	220.00	230.00	379.00
Plate and Structural	per gross ton	320.00	270.00	350.00	295.00	350.00
#1 & 2 Mixed Steel	per gross ton	325.00	270.00	300.00	295.00	309.00
Shredder Bundles (tin)	per gross ton	245.00	235.00	225.00	185.00	244.00
Crushed Auto Bodies	per gross ton	255.00	235.00	225.00	185.00	244.00
Steel Turnings	per pound	170.00	165.00	102.00	125.00	195.00
#1 Copper	per pound	2.80	2.70	2.70	2.60	2.72
#2 Copper	per pound	2.68	2.59	2.58	2.48	2.55
Aluminum Cans	per pound	.63	.45	.62	.58	.66
Auto Radiators	per pound	1.80	1.44	1.65	1.58	1.72
Aluminum Core Radiators	per pound	.60	.51	.59	.57	.67
Heater Cores	per pound	1.12	1.10	1.48	1.44	1.51
Stainless Steel	per pound	.78	.69	.70	.66	.75

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

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



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- 100 HP 13 CSD MITTS & MERRILL HOG MILL
- AIR CONVEYOR CORP PAPER SHREDDING SYSTEM
- SHRED TECH SHREDDER SYSTEM, MODEL CT-50
- 60 HP CUMBERLAND GRANULATOR, MODEL 24B
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## RUBBER

### Liberty Tire appoints Meyer as senior VP

Pittsburgh-based Liberty Tire Recycling announced the appointment of Kurt C. Meyer as senior vice president of sales and marketing. In his new role, Meyer will oversee the planning, development and implementation of marketing initiatives.

Meyer brings nearly 30 years of high-level marketing and sales experience to Liberty Tire Recycling. Prior to joining the company, Meyer was employed by Waste Management for the past 10 years in various management and senior executive roles, including his most recent position as vice president of sales. He has also served in management or senior executive roles with Service Corporation International, Energetic Solutions Inc., Imperial Chemical Industries Ltd., and Laidlaw Waste Systems Inc.

### Ohio EPA orders tire removal at abandoned landfill

Citing a danger to public health and the environment, Ohio EPA has ordered Martin Landfill Corporation or its corporate owners to remove 6,250 scrap tires at the abandoned Martin Landfill located in Cadiz Township, Ohio.

Ohio EPA has ordered Martin Landfill Corporation or its corporate owners to stop accepting and disposing solid waste and tires; implement mosquito control measures; and establish proper storage piles of tires and fire breaks between piles until all tires are removed. The scrap tires must be properly removed and disposed by mid-August. If neither the company nor the corporate owners comply with the orders, the Agency may seek reimbursement from them after hiring a contractor to remove the tires.

Landfill Resources Incorporated (LRI) is listed as the current owner of the landfill. The former property owners, Jack and Ethel Martin, transferred the property to LRI. LRI later merged with Martin Landfill Corporation which operated the landfill until 1991, when Ohio EPA ordered it to properly close the landfill for solid waste law violations, namely failure to restrict access to the property and allowing open dumping of scrap tires to occur. Enforcement efforts against the Martins have been exhausted and attempts to locate Martin Landfill Corporation's corporate owners have been unsuccessful.

Funding for state-financed tire cleanups comes from Ohio's Scrap Tire Management Fund, which is comprised of a \$1 fee collected on new tires sold in Ohio. Each year, more than 12 million scrap tires are generated in Ohio. Most of these tires are recycled or otherwise properly disposed, but an estimated two million scrap tires remain in illegal dumps in Ohio.

## SALVAGING Millions

by Ron Sturgeon

Autosalvageconsultant.com

### It's 2010, right? If you are looking for a job, make sure you are ready!

I am flabbergasted. I have been interviewing, trying to hire a property and leasing manager. The applicants are so unskilled and unprepared, it really does amaze me.

I wrote several articles last year about resumes and looking for a job, and I am amazed at the crappy resumes I get, but that's all BEFORE the interview. Why don't colleges have a course on how to look for a job? I didn't attend college, so I am a big advocate of being self taught, and if you need information, there is a book out there on the subject. Looking for and taking a new job is tremendously important and potentially life-changing, yet few really prepare for it or make any investments in it. Most applicants spend more time learning about cars before buying one than they take preparing for a job search. If you are going to interview, get a book on acing the interview. You will be immeasurably better-prepared after reading that book.

Now, what am I seeing? Applicants that have no idea how to interview. They are like deer in headlights. They obviously lie, embellish and are just inept in the interview. In addition, they just don't have the skills they profess to have or need to compete for a good job. I am amazed at the applicants that tout their computer skills, but can't really do much on the computer. They think because they have been looking stuff up on the internet, this qualifies as good computer skills.

The position I am hiring for needs to be able to use Excel, Word and, of course, the internet. I don't interview all of the applicants, only the finalists. (More on how efficient owners and managers can make this process in another article). We asked them in an interview to rank their skills 1-10. Many will indicate '7'. We don't tell them until later that we have a small test to give them – its simple, nine cells – takes a little logic.

Out of 10 applicants, maybe 1 can even complete it; though many show high level skills on their resume.

We also give a little math speed test to them to decide how fast and accurate they can do math (problems like 100 divided by 5), and you would be amazed at the bad results. (Another test I threw together, ask for it, and the scoring key.) The math test isn't meant to determine who is right for the job, but quickly shows who is wrong. Those that can't do simple math in their head reasonably fast, need to apply elsewhere. Those of you that know me well or have (gasp) worked for me, know what I mean.

Anyway, the bottom line is this. If you want anything but an administrative low paying job, you must have decent skills in Excel, Word and some PowerPoint. Don't have these skills? Invest a few days in learning courses – call it an investment in the rest of your life.

### Pennsylvania extends recycling, waste tire funding

More than 1,600 municipal recycling programs across Pennsylvania – and the approximately 80,000 jobs the industry supports – will benefit from another decade of guaranteed funding now that Pennsylvania Governor Edward G. Rendell has signed House Bill 961.

According to the Governor, continuing to support local recycling programs is important to Pennsylvania's economy and environment.

Launched in 1988, Pennsylvania's recycling program is funded by a tipping fee of \$2 per ton on all waste managed at municipal waste landfills and resource recovery facilities in the state. The fees generate approximately \$35 million each year to support municipal recycling programs.

In total, Pennsylvania recycles millions of tons of materials each year and reuse businesses annually generate more than \$20 billion in sales, which saves communities money on disposal costs and provides an additional source of revenue.

Governor Rendell's signature on the act ensures the tipping fee will continue to be collected through 2020 and also authorizes a \$1.25 million transfer from the recycling fund to the Waste Tire Remediation Fund to complete high-priority tire pile cleanups, work that is important to protecting public health, he said.

Since 2003, the Governor noted, Pennsylvania has already removed nearly 12.5 million waste tires by cleaning up 111 piles. Nearly 4.8 million of these tires were removed at no cost to the state as a result of aggressive enforcement action by the Department of Environmental Protection.

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

## INTERNATIONAL

## European aluminum can recycling hits 63 percent

Aluminum can recycling has increased to 63 percent across the EU27, data from the European Aluminum Association (EAA) announced.

The recycling rate for aluminum cans has risen to 61.8 percent in 2007 and reached 63.1 percent in 2009.

Germany recycles the most cans, with a rate of 96 percent by using the Green Dot scheme, which means the product manufacturer contributes to the cost of recovery and recycling.

The UK has a recycling rate of 51 percent, ranking 13th in the EU27. Meanwhile, Romania and Bulgaria's recycling rate of 34 percent places them as the worst aluminum recyclers in the EU27 but they also use the Green Dot scheme.

EAA packaging group director Maarten Labberton said, "I am not surprised to see this increase as we have experienced during the past 20 years a solid annual growth of the recycling rates for aluminium packaging in general and aluminium beverage cans in particular.

"This is due to a combination of factors, such as a widespread and still growing awareness among the main stakeholders and the public of the need



to collect and separate out household waste. We are confident that the recycling rate will further increase the next few years, providing our partners maintain and even increase their commitment to improve."

The EAA believes that local authorities and waste management operators are becoming more aware of the high scrap value of well-sorted aluminum, which has led to rising investment in sorting and recycling technologies. Aluminum beverage can consumption increased from 32 billion in 2007 to 24 billion in 2008. Sales of filled aluminum beverage cans grew by 10 percent across western Europe, while central and eastern Europe increased by 3 percent.

## Novelis expands rolling operations in South America

Novelis announced that it will invest approximately \$300 million to expand its aluminum rolling operations in Pindamonhangaba, Brazil, in response to the growing demand for its products in South America.

The expansion will increase the plant's capacity by more than 50 percent to over 600,000 metric tons of aluminum sheet per year. The project, which includes the addition of a third cold rolling mill, a new ingot casting center, a new pusher furnace for the hot rolling mill and various ancillary improvements, is expected to come on stream in late 2012.

"We are experiencing strong demand for our products in South America, particularly for beverage can sheet," said Phil Martens, president and chief operating officer. "Growing per capita income and changes in consumer behavior are driving double-digit growth in demand for beverage cans. Many of our South American customers are accelerating their investments in can making plants and our expansion at Pindamonhangaba will allow us to stay ahead of that demand."

According to Abralatas (Brazilian Association of Highly Recyclable Cans Manufacturers), can sales in Brazil grew by 11.7 percent in 2009, representing a consumption of 14.8 billion units or 40.5 million aluminum cans per day.

## Solar power plant planned for India

Astonfield Renewable Resources and Belectric announced that they have entered into an agreement for the execution of Astonfield's 5MW solar power plant in Osiyan, Rajasthan. The Osiyan project is one of several Astonfield plants expected to be approved under the Migration Phase of the Jawaharlal Nehru National Solar Mission and will be Astonfield's first solar power plant to be commissioned and come online in 2010-11. Belectric has already completed site designs and engineering on the plant. The construction will begin immediately following Migration approval.

In addition to plant design, construction and commissioning, Belectric will also provide operations and maintenance services for the plant. The Osiyan power plant will be the first utility-scale solar power plant commissioned by Belectric under India's National Solar Mission. The 5MW solar power plant, located in the Jodhpur District of Rajasthan, will sit on 30 acres of land. A total of 185 acres has been secured under a long-term lease to allow for an additional 20MW build out in the future. The Osiyan plant is expected to bring over a hundred jobs to the local community and has the capacity to power approximately 13,000 homes.

*I want to die peacefully in my sleep, like my grandfather. Not screaming and yelling like the passengers in his car.*

## European recyclers see PET bottle shortage

According to the European Plastics Recyclers Association (EuPR), the PET bottle supply for European recycling is too tight. The recycling capacity has been following the increasing trend of PET consumption and collection but the current combination of market forces has reduced the output of the European recycling plants. This situation is caused by several factors such as the exchange rates, a longer winter, the bottles' weight reduction and the increased export to the Far East. As a result, this situation is getting critical for some recycling operations as their input material is getting scarce.

This situation could easily be improved by increasing the collection ratios and focusing on local recycling. Furthermore, the big differences per country regarding the quality and the quantity of the collected materials

urgently needs further harmonization. European collection and recycling are the fundamentals of a sustainable recycling system. Thus, long distance exports do not fit in this concept. Additionally, the security of supply needs to be improved before Europe loses experienced and trained recyclers.

The EuPR underlines that focusing on European recycling is the key for long term sustainable resources management. Leakage of bottles to the Far East is leading to a more unsustainable situation, which will affect the converters, brand owners and final users. Furthermore, the benefit of the collected material financed by the European tax payers is being misused outside the EU instead of being used for supporting the European recyclers helping Europe to move towards a recycling society.

## Harsco expands in Middle East

Harsco Corporation announced new contracts in the Gulf Region of the Middle East totaling close to \$5 million over 3 years that will make Harsco one of the environmental services providers to that region's growing aluminum industry.

Operating through a Harsco-controlled joint venture partnership in Bahrain called AluServ, Harsco serves the Gulf Region as one of the leading processors of aluminum dross, a metal-containing by-product of aluminum production. As the region continues to

expand its aluminum output, Harsco is responding with the installation of a rotating tilting furnace (RTF) that will make Harsco the largest dross processor in the Gulf Region and also enable the company to serve an increasing number of customers. The new RTF facility will be integrated with a new salt cake processing plant also being installed by Harsco that will give the region an environmentally-responsive, zero waste solution for the recycling of aluminum dross.

## The David Joseph Company establishes new Switzerland office

The David Joseph Company (DJJ) announced the opening of an international office in Switzerland. The new office represents another step in DJJ's strategy to expand its global presence while striving to become closer to its worldwide customers.

The Switzerland office is DJJ's platform to better serve current and potential European customers, focusing on ferrous

and ferro-alloy scrap, as well as exploring other opportunities to provide DJJ's wide array of services.

The office is staffed by Brad Ford. Ford joined DJJ in 2001, and served as a brokerage representative in the Pittsburgh and Philadelphia trading offices prior to being promoted to Pittsburgh district manager in 2006.

### 'CanSort' Air-Less Metal & Magnetic Sorting Machines



'CanSort' offers a complete line of Rare Earth Neodymium Eddy Current Separators, Magnetic Products and (see inset) Air-Less Narrow-Finger Machines for E-Scrap Sorting.

The 'CanSort' Air-Less Metal Sorting Machines are supplied with vibration feeders.

The 'CanSort' FINES Metal Recovery Machine is also available.



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## BUSINESS BRIEFS

### John Van Ruitenbeek joins Sennebogen as sales VP

■ John Van Ruitenbeek recently joined Sennebogen.

Ruitenbeek, previously with Briggs Construction Equipment, has been appointed as vice president sales and marketing. Ruitenbeek was already familiar with the company as Briggs Construction Equipment had successfully represented the Sennebogen line since 2002.

### Environmental Quality acquires Envirite

■ The Environmental Quality Company (EQ) has acquired Envirite. This includes all waste treatment, transportation, service and recycling operations at Envirite of Ohio, Envirite of Illinois and Envirite of Pennsylvania.

Like EQ, Envirite has a long history of servicing the environmental industry. With over 35 years of experience, Envirite specializes in the treatment and recycling of metal bearing liquids and solids. This includes contaminated solids, debris, liquid and dry waste recovery.

Services provided by Envirite include inorganic solid and liquid waste treatment, transportation services, drum waste management, metals recycling, technical services and remediation services.

Terms of the transaction are not disclosed.

### RecycleBank adds to executive team

■ RecycleBank announced the appointments of Ian Yolles as chief marketing officer and Samantha Skey as chief revenue officer. The announcement is effective immediately.

Yolles joins RecycleBank with extensive entrepreneurial and executive level leadership experience managing brand building and marketing activities for some of the world's most influential consumer product companies, including The Body Shop, Patagonia and Nike.

Prior to RecycleBank, Yolles was part of a small team that founded Nau, an innovative retail-direct outdoor lifestyle apparel company where he brought the brand's narrative to life via a digital-centric approach to marketing and storytelling.

Skey brings RecycleBank a wealth of experience in new revenue creation for online and offline media and marketing businesses. Skey was the chief marketing officer at Passenger, Inc., a social software company providing online community for top brands.

An innovator in building innovative online revenue models, Skey was the executive vice president of strategic marketing for Alloy Inc., and has served in management positions at the Walt Disney Company, CNET and Interactive Imaginations. Skey regularly consults with leading organizations in social media and youth advocacy.

### Green EnviroTech appoints new board members

■ Green EnviroTech Corp., a plastics recovery, separation, cleaning and recycling company and a wholly-owned subsidiary of Wolfe Creek Mining, Inc., announced the appointment of four board members in 2010.

Joining the board include: Gary M. De Laurentiis; chief executive officer; Jeff Chartier, president; Andrew Kegler, chief technology officer; and Wayne Leggett; chief financial officer.

De Laurentiis, CEO, has over 35 years of extensive experience in the plastics industry. He founded RPX Corporation as a plastic broker to the Hong Kong market and formed a joint venture to build a recycling plant with government funding. De Laurentiis also founded Eco2Plastics which won "Top 100 Innovations" by Popular Science. He has held the position of CEO since the inception of the company in 2008.

Chartier has almost 20 years of experience in the financial services industry including a successful stint with Morgan Stanley. He previously oversaw his own full service retail brokerage firm, Chartier Financial. He joined the company as president in 2009.

Kegler, chief technology officer, is the founder of Ergonomy LLC, an engineering company focused on development of intellectual property and chemical processes. In his broad and decorated career, he has developed and implemented the first fully automated, water free, recycled plastic finishing cleaner.

Leggett, chief financial officer, is an accredited accountant with 35 years of experience. He has previously served as the CFO of Corporate Host Development, Inc., in Austin, Texas, and was the vice president for the Accreditation Council for Accountancy and Taxation for two years.

### Zenith Cutter hires global director of marketing

■ Zenith Cutter Co. recently announced the appointment of Thomas Parsons as its new director of marketing. Parson's primary responsibilities will be the development of marketing initiatives designed to strengthen the global brand awareness of Zenith Cutter Co. He will also be instrumental in identifying and capitalizing on new business development opportunities for the company. Parsons holds extensive experience and knowledge within a variety of disciplines in the sales and marketing of industrial products.

Prior to joining Zenith Cutter Co., Parsons held the position of sales manager for Ipsen, Inc., Cherry Valley, Illinois. His primary responsibility was to oversee the sales and marketing efforts associated with the successful introduction of one of the company's vacuum furnace offerings. Parsons has also held a number of sales management positions for the Gunite Corporation, Rockford, Illinois, including director of marketing and national sales manager.

### Metalico hires Alberico to head nonferrous team

■ Metalico, Inc. has appointed veteran industry executive Steven M. Alberico as vice president of nonferrous sourcing and marketing for its scrap metal recycling subsidiaries.

Alberico has nearly 35 years of experience in scrap metal recycling. At Metalico he will be responsible for coordinating nonferrous operations across the Company's several geographic platforms and growing its nonferrous sales.

A native of the Utica, New York area, he has worked extensively in plant operations and inventory management as well as sales. Most recently he served as a vice president of OmniSource Corporation in Fort Wayne, Indiana, where he helped increase both tonnage and market share during the height of the recession notwithstanding the significant contraction in the economy.

Alberico brings to Metalico deep knowledge and experience in all areas of nonferrous scrap, with particular emphasis in nickel and stainless steel metals. He will be based in Rochester, New York, centrally located to facilitate regular interaction and visits to Metalico's various operating facilities in the Great Lakes corridor, but will report directly to the Company's senior management in Cranford, New Jersey.

## Events Calendar

### August 9th-13th

**National Environmental Monitoring Conference (NEMC) 2010.** Hyatt Regency Capitol Hill, Washington. [www.nemc.us](http://www.nemc.us)

### August 15th-17th

**WASTECON 2010.** Boston Convention and Exhibition Center, Boston, Massachusetts. 800-467-9262 • [www.wastecon.org](http://www.wastecon.org)

### August 30th-September 2nd

**Power Plant Air Pollutant Control "MEGA" Symposium.** Baltimore Marriott Waterfront Hotel, Baltimore, Maryland. 412-904-6012 • [www.megasymposium.org](http://www.megasymposium.org)

### September 13th-15th

**20th Annual Arkansas Recycling Conference & Trade Show.** The Robinson Center, Little Rock, Arkansas. 866-290-1429 • [www.recycleark.org](http://www.recycleark.org)

### September 28th-30th

**The GREEN Expo.** World Trade Center, Mexico City, Mexico. 52-55 1087 1650 [www.ejkrause.com/thegreenexpo](http://www.ejkrause.com/thegreenexpo)

### September 29th-October 1st

**2010 Rubber Recycling Symposium.** Sheraton Centre Hotel, Toronto. 905-814-1714 • [www.rubberrecycling.ca](http://www.rubberrecycling.ca)

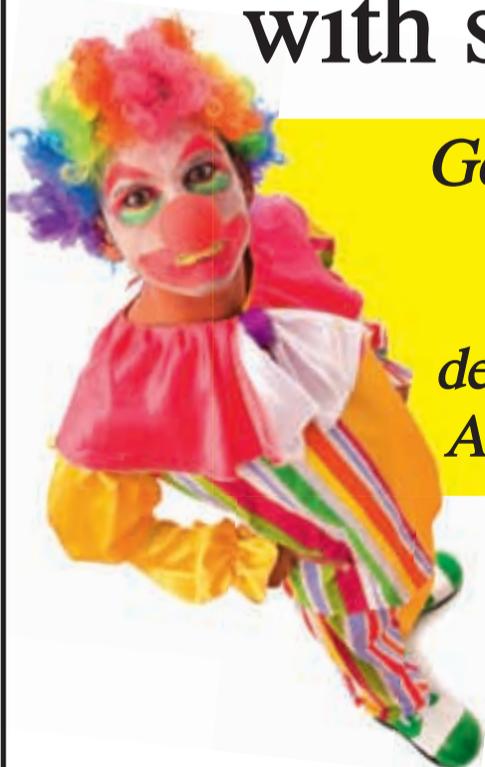
### October 3rd-6th

**2010 Global Waste Management Symposium.** JW Marriott San Antonio Hill Country Resort & Spa, San Antonio, Texas. 800-559-0620 • [www.wastesymposium.com](http://www.wastesymposium.com)

### November 3rd-4th

**Canadian Waste & Recycling Expo.** International Centre, Toronto, Ontario. 877-534-7285 • [www.cwre.ca](http://www.cwre.ca)

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## BUSINESS BRIEFS

### New president of Denton Plastics appointed

■ Dennis Denton announced the appointment of Nicole Janssen as president of Denton Plastics. Janssen formerly served as vice president and has been with the company for 16 years.

Janssen's promotion is part of a long-term succession plan. She will replace company founder Dennis Denton as president. Denton will remain active with the company and retains his position as chairman of the board.

In additional news, Teresa Galin was promoted to senior vice president. Galin was previously vice president of finance.

### Doosan Portable Power names new dealer

■ Doosan Portable Power has named Clifford Power Systems of Tulsa, Oklahoma, an authorized dealer of its Ingersoll Rand-branded line of mobile generators for Oklahoma, Arkansas and the Austin and San Antonio areas of Texas.

Clifford Power Systems is a full-service company providing sales, rental, parts and service for standby and mobile power generation systems for various applications, ranging from 7 to 9,000 kilowatts. The company provides power systems for industrial customers, as well as mobile and rental generators for municipalities, construction and residential customers. Clifford Power Systems also has the capacity for immediate response in emergency situations.

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### Navistar adds new dealers in key markets

■ Navistar, Inc. announced five changes in its dealer network that will strengthen its distribution and service channel.

Through the combination of several dealerships in southern Georgia and West Virginia, the pending ownership change in Utah/Idaho and the addition of new dealers in Arizona and Indiana, Navistar is changing the game in its level of distribution and customer support in these markets.

Following the purchase of two International Truck dealerships in southern Georgia by Yancey Bros. Co., Yancey Truck Centers was recently launched with four full-service sales, parts and service locations in Albany, Blackshear, Georgia, Tifton, Georgia and Valdosta, Georgia.

Four International Truck dealership locations in West Virginia, known as Heritage International, were purchased by Gary Kale, CEO of Heritage Equipment, Inc. Kale has years of experience serving the needs of the West Virginia market, especially customers in the coal industry.

Navistar completed sales of two company-owned dealerships to private investors. The International® Truck dealerships – one located in the Phoenix/Tucson, Arizona market and the other in the Indianapolis, Indiana market – have been successfully transitioned to industry veterans Robert Cunningham and Shelby Howard, respectively.

Howard has operated successful commercial truck dealerships in Indiana since 1992 and has a proven track record of award-winning dealership performance, having won multiple Dealer of the Year awards.

Cunningham has worked in the transportation industry since 1973 and has held executive leadership roles, including CEO, with one of the nation's largest truckload carriers. In the late 1990s, Cunningham owned and operated one of the nation's most successful commercial truck dealerships in the Phoenix area.

### Case Construction sells interest in LBX Company

■ Case Construction Equipment announced the sale of its interest in LBX Company LLC to S.C.M. (America), Inc., an affiliate of Sumitomo (S.H.I.) Construction Machinery Co., LTD. As a result of this transaction, LBX is now wholly owned by Sumitomo.

"The decision to sell our interest in LBX is a continuation of the strategy we began in 2009 to consolidate back office brand management and streamline our industrial footprint," said Jim McCullough, CEO and president of CNH Construction.

The existing global supply alliance between SCM and CNH Global will remain intact.

*Exert your talents and distinguish yourself, and don't think of retiring from the world until the world will be sorry that you retire.*

—Samuel Johnson

### OmniSource adds to its management team

■ OmniSource Corporation, headquartered in Fort Wayne, Indiana, announced the following additions to its ferrous and nonferrous teams.

Shane Smith has joined OmniSource as the Northern Indiana division manager in Fort Wayne. Most recently he was the vice president of commercial operations with River Metals Recycling in Louisville, Kentucky, where he managed 13 yards and was responsible for scrap marketing and processing. A graduate of Purdue University, Smith previously worked for Commonwealth Aluminum and Metal Exchange Corporation.

Stan Davis has joined OmniSource Southeast as plant manager at the Smithfield, North Carolina operation. Davis has over 18 years scrap industry experience, most of which were with Commercial Metals Company where he served as area manager for yards in Florida and South Carolina. Davis is a graduate of the University of South Carolina.

Larry Kraynik, most recently from Miller Compressing Company in Milwaukee, Wisconsin, has joined OmniSource's nonferrous division in Fort Wayne. Larry's diverse nonferrous metals background will be utilized in the procurement and trading areas. Kraynik's previous experience includes positions with Commercial Metals Company and Wabash Alloys. Kraynik is a graduate of Purdue University.

### Money4Gold to acquire Office Products Recycling

■ Money4Gold Holdings, Inc. (MFGD) announced that it has signed a letter of intent to acquire Kansas City, Missouri-based Office Products Recycling Associates (OPRA), a 15 year old recycler of cell phones, smart phones, inkjet printer cartridges and toners. OPRA has an extensive business-to-business model as well as consumer model, which will increase Money4Gold's customer, channel and product footprint.

MFGD recently rolled out a diversification strategy to include a direct response program for customers to recycle cell phones and smart phones through its network, but this proposed acquisition will move the combined company forward more quickly than either company could have developed new products and sales channels on its own.

The company intends to change its name to Upstream Worldwide, Inc. and has already received shareholder approval.

### Caraustar names Michael Patton as new CEO

■ Caraustar Industries, Inc. announced that Michael C. Patton, has been appointed by the board of directors to serve as the company's chief executive officer.

Patton joins Caraustar after more than 10 years with Greif in senior leadership roles. Patton held the title of senior vice president, global sourcing and supply chain and divisional president, industrial packaging North America.

### QCSA Holdings acquires Salvage Direct

■ QCSA Holdings, Inc., a vehicle remarketing and total loss claims management company, announced it has purchased and will be uniting forces with Salvage Direct.

Salvage Direct was founded in 1998 by Bob Joyce as the first online auction in the total-loss claims management industry. The company also specializes in commercial and catastrophic-loss management services.

### Shred-Tech hires new MDS sales representative

■ Shred-Tech announced that Richard Tennant has joined the company as an MDS sales representative.

Tennant had been a key member of the team at Jake Connor and Crew for eleven years holding many positions within the company ranging from production to most recently the position of sales manager. Tennant's extensive knowledge of the document shredding industry and sales related experience will make him a good addition to the MDS sales team.

### Jeff Jakubiak takes new position with ACS Group

■ ACS Group announced that Jeff Jakubiak joined the operations team for the material handling department as the material handling/electrical production supervisor where he will be directing and supervising the material handling production lines.

With over 10 years of experience in the plastics industry, Jakubiak has been with ACS Group for 2 years. He started as a service technician for the material handling product line.

Prior to working at ACS Group, Jeff worked as a maintenance technician at Novapak PVCC Container Corp.

### Gervais named general manager of Akro-Mils

■ Akro-Mils announced that Jeff Gervais has been named general manager. Gervais will assume all operational responsibility for Akro-Mils, which designs and manufactures a wide range of plastic storage bins and containers, metal shelving systems and mobile material handling systems sold through industrial and commercial distributors nationwide.

Joel Grant continues to serve as managing director of the Material Handling Group.

Prior to joining Akro-Mils, Gervais worked at the group's Cincinnati-based Buckhorn offices and served as the director of finance and MIS for the Material Handling Group. In this position, Gervais was responsible for managing all financial and IT personnel, overseeing financial and IT requirements for the functional departments within the Material Handling Group, and compiling and analyzing various financial reporting and production reports as needed.

# NEW PRODUCT SHOWCASE



## MULTI-PURPOSE RECYCLING BIN NEW FROM SMART PRODUCTS

Toronto-based Smart Products Worldwide has developed and patented the Smart Bin™. Available in two and three-compartment models, the Smart Bin allows homeowners to easily and effectively separate organic, traditional recycling and plain old garbage in an attractive stainless steel push-pedal bin. Made of post-consumer plastics, the Smart Bin makes the task of sorting and recycling a snap. With removable inside containers, this sturdy and attractive bin is a welcome addition to any kitchen, bathroom, or office.

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Canada  
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www.esmartproducts.ca



## SPECTRONIC'S NEW INDUSTRIAL LEAK DETECTION KIT AVAILABLE

Spectronics Corporation has introduced the new OPK-340 Industrial Leak Detection Kit, which has everything needed to pinpoint the source of all fluid leaks. The kit features the cordless, rechargeable OPTI-MAX™ 3000 blue light LED leak detection flashlight. Included is a 16 oz., twin-neck bottle of OIL-GLO™ 44 concentrated fluorescent oil dye, a 16 oz. twin-neck bottle of WD-802 concentrated fluorescent water dye, an 8 oz. spray bottle of GLO-AWAY™ dye cleaner, smart AC and DC chargers and fluorescent-enhancing glasses.

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956 Brush Hollow Road  
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www.spectroline.com



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Stafford's Grip & Go handle is designed to replace a standard socket cap screw in a one, two-piece and hinged shaft collar to permit wrench-free adjustment without sacrificing holding power. Featuring a knurled surface for simple hand-tightening, this handle is ideal for any non-rotary application where there is a need for frequent repositioning along a shaft. Available in steel, stainless steel, and aluminum, Stafford's Grip & Go Handle comes in sizes for replacing clamp screws ranging from 4-40 to 3/8-24. A higher-torque style is also offered for added tightening leverage.

**Stafford Manufacturing Corporation**  
PO Box 277  
North Reading, MA 01864  
800-695-5551  
www.staffordmfg.com



## STELLAR INDUSTRIES ADDS EC SERIES CRANE WITH 21' REACH

Stellar Industries has released a new electric/hydraulic crane. The Stellar® EC6000 is a 38,000 foot-lb. rated crane with a maximum lifting capacity of 6,000 lbs.. The EC6000 has a 21' reach. Other features, which can also be found on all EC Series cranes, include a standard radio remote control and environmentally friendly hydraulic oil, both of which are industry first standard features for a crane in this class. Other features include short stowing height, a double-boom design, a high-strength steel worm gear and a cast-steel worm gear housing.

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800-321-3741  
www.stellarindustries.com



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The U.S. Shredder & Castings Group's new "double" grate was designed for use in larger automobile shredders. It allows the grate to be reinforced and prevents the "bowing" that sometimes occurs even with a high quality single grate. The double grate also has the option to have a staggered hole pattern. By staggering the grate openings you ensure that every hammer is swinging above a grate opening at some point in its travel. This provides greater wear life and improved shred throughput within the shredder.

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## Businesses

**BIBB AUTO PARTS & SALVAGE YARD** in Macon, Georgia. In business since 1949 with same phone number. 22.77-acre site. Zoned C4 highway commercial, future zoning **RESTRICTS** additional salvage yards. Compliant with EPA. **IAA AUTO AUCTION** one half mile from business location. \$1.2 million. Call 478-718-5528 or 478-743-8682.

## Businesses

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**HEAVY INDUSTRIAL PROPERTY OFFERED.** 28+ acres at center of North East corridor in Albany, New York. 200 to 400' wide, 1 mile long. Lies between CSX and Guilford RR. Currently-running scrapyards, 70kv on property. Visit <http://sites.google.com/site/sunenterprizes> for more information or call 518-887-2330.

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13,000 sq. ft. working space, (2) separate 3-bed apartments, paint booth, (2) frame machines, (3) lifts, air conditioned garage, (2) tiltbeds, (1) light-duty wrecker, (1) medium-duty wrecker, (1) heavy-duty Peterbilt wrecker with underlift, (1) Army 6 x 6 wrecker, Al-jon car crusher, numerous forklifts and hi-lifts, (2) tractor trailers with trail-king trailer - one with 45 alum. trailer.

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2002 Cat M318 (rubber) 36' reach, A/C, hydraulic cab, gen-set and grapple.

**FUCHS**  
2004 MHL380 (rubber), 69' reach, hydraulic cab, gen-set and grapple  
2003 & 2006 MHL 360 (rubber), 59' reach, hydraulic cab, gen-set, magnet & grapple.  
2003 MHL331 (rubber), 34' reach, hydraulic cab, gen-set and grapple.  
2001 MHL 331 rebuilt (rubber), 36' reach, hydraulic cab, gen-set and grapple.

1996 RHL 350 REBUILT (crawlers), 47' reach, hydraulic cab, gen-set and grapple.  
2005 MHL 350 (rubber), 50' reach, hydraulic cab, gen-set and grapple.  
2001 & 2003 MHL 340 REBUILT (rubber), 41' reach, hydraulic cab, gen-set and grapple.  
1995 MHL 350 REBUILT (rubber), 50' reach, hydraulic cab, gen-set and grapple.

**LIEBHERR**  
2001 A934 REBUILT (rubber), 51' reach, hydraulic cab, gen-set and grapple.  
2001 A924 REBUILT (rubber), 40' reach, hydraulic cab, gen-set and grapple.

2000 R914 REBUILT (crawler), 38' reach, 4' cab riser, gen-set and grapple.  
2000 A904 REBUILT (rubber), 35' reach, 4' cab riser, gen-set and grapple.  
1999 R934EW REBUILT (crawler), 50' reach, 4' cab riser, gen-set and grapple.

1998 A922 REBUILT (rubber), gen-set, grapple and magnet, no riser.  
1994 A932 REBUILT (rubber), hydraulic cab, gen-set and grapple.

**SENNEBOGEN**  
2006 821M (rubber), 36' reach, hydraulic cab, gen-set and grapple.  
2004 835M (rubber), 52' reach, hydraulic cab, gen-set and grapple.  
2000 830M REBUILT (rubber), 50' reach, hydraulic cab, gen-set and grapple.

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2004 SIERRA T500SL shear/baler combination.  
2008 AL-JON 580CL portable logger/baler  
2002 CASE CX240 (crawler excavator) with new gen-set and new 48" magnet.

2003 NEW HOLLAND MH (rubber), 40' reach, cab riser, gen-set and grapple.  
1996 KOMATSU PC240 REBUILT (crawler), 38' reach, 3' cab riser, gen-set and grapple.  
Trackmobile TM5 rail car mover.

1995 NORTHSHORE 2100 SE REBUILT (stationary electric-75HP) MH, 27' reach, cab, A/C and grapple.  
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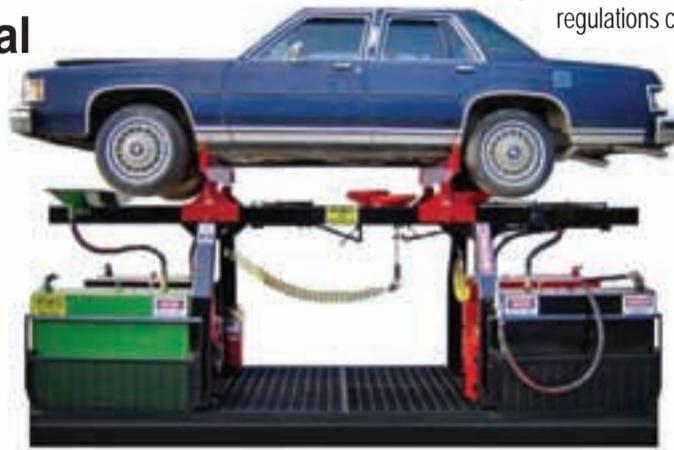
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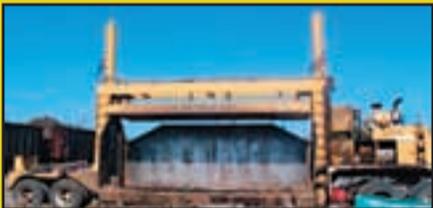
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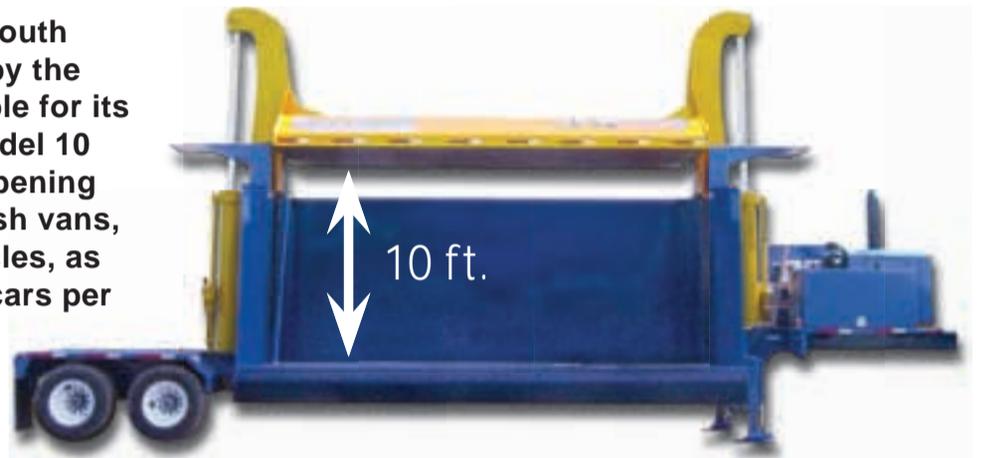
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## Solar saves water supplies and wallets

by MIKE BRESLIN

mbreslin@americanrecycler.com

There is a serious global shortage of potable water. Not just in equatorial countries where populations are rising, but in the arid southwestern United States. Even in rain-rich areas, water tables are dropping due to increased consumption, and what remains is being contaminated by salts from water conditioning, chemicals from fertilizers, industrial effluences and landfills.

Of a world population of roughly 6.1 billion, the World Health Organization estimates that more than one billion people lack access to potable water – five billion die each year from diseases caused by water shortages, poor drinking water, inadequate sanitation and dirty living conditions.

“Water is going to become more and more of a crisis in the United States, partially because water infrastructure is degrading quickly. Water treatment facilities and pipes are badly neglected, and it’s only going to get worse in my lifetime. Businesses and technologies that address this problem are only going to do well in the next 25 years,” said Tom Rooney, CEO of SPG Solar. SPG is a solar integration company that has built over 1,500 solar systems in 8 western states, many serving water supply and wastewater interests.

Solar energy and recycling are both green industries, but are growing more compatible and synergistic with each passing year. The many vexing problems of water conservation, treatment, purification, desalination and pumping are finding new and intriguing solar powered solutions.

SPG, for example, accidentally discovered an unexpected water conservation benefit of a solar electric installation in California that is drawing delegations from as far away as Australia and Israel to study the phenomena. It’s called “floatovoltaics.”

The story began several years ago when SPG engineered a solar system for the Far Niente winery – one of Napa Valley’s most prestigious. Far Niente wanted solar to power their vineyard operation and be green, but were reluctant to give up valuable vine growing space. SPG proposed a novel, first-of-its-kind solution – use pontoons to float 994 photovoltaic panels on a 1-acre spring-fed pond to create 207 kW of power adjacent to a land installation of 271 kW.

“We know how much land we saved, but after several years other benefits emerged that are incredibly interesting,” said Rooney. Panels float on water which is a natural heat sink and they remained cooler than land-mounted panels for an unexpected increase in electricity production. The winery found they no longer had to put chemicals in the pond to control algae – saving in labor and cash, and keeping chemicals out of the water. They also had much more water



The Far Niente vineyard in California saved valuable vine growing land by floating photovoltaic panels on a one-acre pond. The panels also had the unexpected benefit of blocking 80 percent of evaporation of the water that was caused by the sun and wind.

than ever before for irrigation. And in California, water is a precious commodity.

“We figured it had to be due to sun shading, but went further and had academics study it. It turned out that evaporation in that geography is huge. Seven to eight vertical feet of water evaporate every year. The panels block about 80 percent of the evaporation on the surface they cover because they shade it from the sun. But the panels also block wind from blowing on the surface, and physically cap the surface so it’s not exposed to air,” Rooney explained.

Southern California is in the midst of an unprecedented water crisis that is burdening many farmers and growers with ever higher water prices, or even outright unavailability that is closing farms and uprooting vines and orchards.

California has thousands of water district retention ponds and reservoirs that prohibit recreational activities such as swimming, boating and fishing. Floating solar panels on portions of these waters have the potential to generate clean electricity while annually conserving millions of acre-feet of water.

See SOLAR SAVES, Page 7

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## A Letter from the Editor

Readers,

July is the month that our nation celebrates its independence. Keeping with the theme of independence, in this month's Focus Section, American Recycler examined some of the progress that our country is making towards independence from old fashioned fuels and foreign oil.

The disastrous oil spill in the Gulf of Mexico is making headlines daily. It is the largest oil spill in the history of our nation, and appalling photographs of oil soaked wildlife have percolated through the media. The public outcry has been enormous, and despite having limited options to solve the problem, people are furious about the lack of action by the government and BP.

While no one contests that the oil spill is a terrible thing, there is a bright side. This spill highlights one of the major advantages of alternative energies – namely, that most are incapable of causing ecological disasters of this magnitude. The oil spill has become a driver of innovation and a rallying point for those who seek to make alternative energy mainstream.

The concept and heretofore empty promise of American independence from foreign oil has been tossed about by various politicians for decades. Now, however, the technologies are catching up to the political aspirations.

Wind and solar technologies have become more efficient and cost effective. Cars powered by electricity can go for hundreds of miles on a single charge. Human waste once thought worthless is now capable of being harvested for clean burning gases. The technology has finally reached the point where independence from foreign oil is no longer a pipe dream, but a definitive goal, that might be achieved with technology that is no longer confined to the realm of science fiction.

Some believe that an addict has to hit rock bottom before they can kick their habit. Hopefully, this ongoing ecological disaster in the Gulf is our nation's rock bottom. If we're lucky, this will be the wakeup call that stirs complacent companies and individuals to do their part towards helping America kick its addiction to oil.

Have a safe and happy Independence Day. I hope you enjoy this month's edition of American Recycler. We'll see you in August.



Dave Fournier  
Focus Section Editor  
david@americanrecycler.com

# Chevron and Marine Corps reveal first Navy landfill gas project

Chevron Energy Solutions, a unit of Chevron Corporation, and the Marine Corps Logistics Base (MCLB) Albany announced the start of construction for the Department of Navy's first landfill gas cogeneration project.

The project will produce 1.9 megawatts of renewable electric power and steam by burning landfill gas collected from a nearby landfill. Chevron Energy Solutions will also complete industrial lighting retrofits in 82 buildings and expand the existing energy management control system. When combined with the cogeneration project, these measures will reduce the base's purchase of utility power and reduce MCLB's carbon emissions by 19,300 tons annually, equivalent to removing 16,000 cars from the road.

"This project is important to the Department of the Navy, the Marine Corps and Dougherty County. And with the help of Chevron Energy Solutions we will surpass our federal renewal energy goals, and fulfill our aspiration of becoming

the greenest Marine Corps installation in the nation," said Col. Terry V. Williams, commanding officer, MCLB Albany. "In addition to providing renewable power and energy security and reliability to MCLB, the project provides a valuable long-term source of revenue for Dougherty County."

Chevron Energy Solutions developed and designed the project and will maintain the landfill gas-to-energy facility, pipeline and landfill gas processing equipment. The new facility will house a dual-fuel engine generator, a stack heat recovery steam generator and two dual-fuel boilers. The primary equipment can operate on landfill gas or natural gas, which provides energy security benefits. MCLB's use of renewable power will increase to 19 percent, which exceeds the EPAct of 2005 and Energy Independence and Security Act of 2007 mandate of 7.5 percent renewable power use by 2013.

Chevron Energy Solutions and MCLB will share in the operation of the

generator and steam-producing equipment. Through an energy savings performance contract (ESPC), Chevron Energy Solutions arranged the financing for the project, which is repaid through the energy costs avoided. The company also guarantees system performance for 22 years.

Said Jim Davis, president of Chevron Energy Solutions, "The project is funded entirely by energy savings and demonstrates how military bases and local governments can work together with private industry to meet federal mandates without increasing taxpayer costs."

Dougherty County will extract and sell the landfill gas to MCLB from the Fleming/Gaissert Road Landfill, which receives approximately 100,000 tons of municipal solid waste each year. The biological decomposition of the waste generates landfill gas that is approximately 50 percent methane gas by volume.

The project is expected to be completed by April 2011.

## Arizona Governor signs bill in support of emerging renewable energy industries

Arizona Governor Jan Brewer has signed SB 2370, a bill that creates individual and corporate income tax credits for research and development, production and delivery system costs associated with solar liquid fuels. SB 2370 also specifies that qualified research includes

only research conducted in Arizona, including research conducted at a university and paid for by the taxpayers. It is in effect from 2011 to 2026.

A signing ceremony, hosted by Arizona State University president Michael Crow, was held at ASU's Research Park.

Gary Dirks, director of LightWorks, an ASU initiative focused on solar-based energy and other light-inspired research, said passage of the bill is great news for the future of Arizona and the renewable energy industry in the United States.

Similar to photosynthesis, solar liquid fuel refers to the process by which concentrated solar energy is used in conjunction with carbon dioxide and water to create hydrocarbons. In addition to creating combustible fuels like methanol

and ethanol, additional processing can potentially yield more traditional fuels like gasoline, diesel and jet fuel.

ASU is leading a national team of researchers that has submitted a proposal to the United States Department of Energy to become an Energy Innovation Hub. The \$122-million Hub will explore the research and development of fuels from sunlight and will support cross-disciplinary research and development focused on the barriers to transforming energy technologies into commercially viable materials, devices and systems. ASU partners in the LightSpeed Solutions project include Sandia National Laboratories, Princeton University, Yale University and the University of Minnesota.

## Hydro Aluminum extruded frames chosen for first hybrid solar facility

Hydro's Extrusion Americas unit has signed an agreement with Florida Power & Light (FPL) to supply custom aluminum extrusions for the first hybrid solar/fossil fuel energy generating facility in the world. When it comes online in late 2010, the Martin Next Generation Solar Energy Center will produce 75MW.

The Indiantown, Florida facility will employ concentrated solar power (CSP) technology to produce electricity. This process uses parabolic mirrors to capture solar heat, which produces steam that turns a generating turbine.

Hydro will produce the frames, supports, legs and connectors that will raise the 180,000 curved mirrors off the ground and allow them to track the sun throughout the day. Manufacturing plants in St. Augustine, Florida and Belton, South Carolina will supply the parts, provide fabri-

cating and coordinate just-in-time deliveries for the frames used in the 500-acre collecting field.

The extruded aluminum frames are lightweight, yet provide enough torsional strength to withstand hurricanes. The manufacturing process allows the frames, which contain a high percentage of recycled aluminum, to be machined to precise tolerances for quick assembly.

The solar energy generation system will connect to FPL's existing combined-cycle power plant, allowing the solar thermal capacity to directly displace fossil fuel. The plant will use less fossil fuel during daylight hours when the solar system is helping produce the steam needed to generate electricity. It will produce approximately 155,000 MW of power annually, enough power to serve about 11,000 homes.

**AR** Upcoming Section B  
editorial focus topics

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# Strong government support enables progress for Asian Pacific wind energy markets

In recent years, the Asia Pacific wind energy market has taken huge strides forward. Developed nations such as the United States and European countries had a strong head start owing to government support, regulations and the infrastructure to explore the potential of wind energy. During the course of the decade, emerging economies in Asia Pacific, particularly India and China, have made rapid progress and have expanded wind energy generation from 1.7GW in 2000 to 41GW in 2009.

New analysis from Frost & Sullivan, Asia Pacific Wind Energy Market – Investment Analysis, finds that the phenomenal growth of the market is due to the geographically favorable location, government support, recognition of potential, emphasis on renewable development and energy security.

“Asia Pacific accounted for 41 GW capacity in 2009, almost doubling its capacity from 2008,” said Frost & Sullivan financial analyst Sivapriya Ramakrishnan. “The tremendous wind potential is taking tangible shape due to China’s explosive growth; growth in Chinese installations uplifted the global wind energy market.”

Though domestic investment is overshadowing foreign investment to a large extent, the scope for foreign investment is likely to increase through the course of 2010 as new regulations encourage markets to open up. The Asia Pacific wind energy market was largely immune to the economic downturn, as government-aided institutions and local utilities provided most of the funding for wind energy projects.

Globally, there were some problems due to the economic slowdown; however, the stimulus packages (particularly those of the Chinese and Indian Governments) provided a shot of adrenalin for the renewable energy market.

## SPI and PacEd develop solar project for CA transfer center

Solar Power, Inc. (SPI) announced that it has been contracted by BLT Enterprises to design and construct a 397 kW photovoltaic solar system to provide power for BLT Enterprises’ Fremont Recycling and Transfer Station (FRTS) located in Fremont, California.

The project has been developed jointly by Pacific Edison, LLC (PacEd) and Solar Power, Inc. The FRTS handles the recycling and disposal needs for the residents of the Tri-Cities area (Fremont, Newark and Union City) and in 2009 recycled nearly 14,000 tons of material.

*Why is it that when you transport something by car, it’s called a shipment, but when you transport something by ship, it’s called cargo?*



India, China, Australia, Vietnam and Thailand are heavily investing in high-voltage direct current systems (HVDC) to support increasing power loads from renewable sources, such as these windmills in India. The HVDC systems enable transmission of power collected from remote sites with less power loss from inefficiencies.

Though the prospects for the market look upbeat, there are some challenges reining in market progression. About 30 percent of the wind energy generated does not reach the grid due to inefficiencies. The existing grid is not equipped to transport renewable energy. Unless the grid is upgraded, the generation of renewable energy can be seriously hampered.

Apart from this, ambiguity regarding legislation such as the Mandatory Renewable Energy Target (MRET), Generation-based incentives (GBI) and emissions trading has slowed market momentum. Solar energy is approaching large-scale commercialization and its attractiveness will eventually overshadow wind energy.

Offshore potential is large in most parts of Asia Pacific and Australia. However, the cost of developing offshore wind power is 2-3 times higher, creating a huge roadblock. There have been notable innovations in deepwater floating turbines and shallow-water turbines, and these advancements will make harnessing offshore potential a viable option.

India, China, Australia, Vietnam and Thailand are heavily investing in high-voltage direct current (HVDC) systems to support their increasing power load. HVDC also supports renewables, as it enables transmission over longer distances (remote sites) and connects offshore wind power through efficient underwater cabling

with lower power loss. Development of feasible energy storage technologies can greatly enhance the contribution of electricity generated by wind energy to the grid. Countries such as Japan are highly dependent on the commercialization of storage technologies to increase the contribution of renewables.

“Wind power capital costs are the lowest in Asia Pacific and it is expected to be reduced by another percent to 30 percent in the next decade,” said Sivapriya. “In the event of the cost reduction and grid upgradation efforts, wind energy is expected to grow steadily.”

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# EQUIPMENT SPOTLIGHT

## Wind Turbines

by MARY M. COX

maryc@americanrecycler.com

Wind turbines collect kinetic energy from the wind and convert it to electricity that is compatible with the electrical system of a home or business.

Cascade Renewable Energy has distributed and marketed the SWIFT Wind Turbine in North America for residential, community and commercial customers since 2008. According to Jessica Lehti, senior sales and marketing manager, "The cut-in speed of the SWIFT product is 8 mph, and it is rated as 1.0 kW at 11 m/s, which is the industry standard for rating a turbine. The cut-in speed indicates the point at which the turbine begins generating electricity. SWIFT Wind Turbines are grid-tied, so once the product is installed, power will always come from their wind generated electricity first, and the rest of the power they may need will come from the user's regular utility source."

Lehti said that unique aspects of the SWIFT include: a quiet design suitable for urban, suburban and rural areas; flexible mounting options – they are structure and pole mountable; an outer diffuser ring that reduces noise created from the wind traveling along the blades, which increases efficiency and reduces vibration; dual fins that direct the turbine 360 degrees, keep the turbine positioned into the wind and provide over-speed protection; a grid-connected unit that offers efficient and autonomous operation without the use of battery storage; and a renewable source of on-site energy.

"Specifically, SWIFT Wind Turbines offer a small, quiet, structure-mountable option for residential home



Cascade Renewable Energy

owners and commercial businesses with limited land resources. SWIFT does not require large amounts of acreage for installation because it can be mounted directly to a building. The small design – the rotor is seven feet in diameter – allows users to install multiple units for additional energy savings, and our product also provides an opportunity for LEED credits for green building," Lehti noted.



Xzeres Wind Corp.

Wind Turbine Industries Corp. (WTIC) manufactures the Jacobs 31-20. Chad Palmer, marketing manager, explained that the Jacobs "is a 20 kW system, rated at 26 mph. The height options offered for this product range from 80 to 140 feet and the Jacobs is available with a freestanding lattice or monopole tower. Our system's unique design has been field-tested for well over one quarter century and it has proven to be one of the most effective and reliable small wind systems available to date."

WTIC has manufactured the Jacobs 31-20 at their location in Minnesota since 1986. "We sell approximately 70 to 100 units annually, with room for growth. Our system tends to be most appropriate for rural applications, both commercial and residential. One of the greatest challenges in serving these groups involves the inconsistent zoning regulations among them, but we've been able to navigate those challenges quite well," Palmer said.

Qua Le is vice president of sales and business development at Xzeres Wind Corp. Members of the firm design, develop, manufacture, sell and support small wind power systems.

"Our products include 2.5 kW and 10 kW systems. Each system includes a wind turbine, power electronics, towers and ancillary components for complete installation. Our products feature a highly-efficient design with few moving parts for easy installation, and reduced service and maintenance costs.

"The superior performance of our products is validated by the National Renewable Energy Laboratory. Xzeres products are reliable – over 100 systems have been deployed in North America and carry a 10 year warranty. The durability turbine system provides 20+ years life. We offer a proven track record and the lowest cost of ownership, compared to similar products in the market today," Le reported. He expects to sell over 80 wind power systems this year and 300 systems in 2011. "We plan to take advantage of federal, state and local incentives, American utility rebate programs and feed-in-tariff incentive programs across the globe."

He noted that despite strong market potential – due to incentives and robust utility policies – local permitting challenges have throttled market potential. However, several key states have recently worked together in enacting legislation to streamline the permitting process at the state level. This process may aid in a significant increase in sales within these markets.

Le claimed that for the last decade, the industry has been largely self-regulated, but at the end of 2009, a technical standard was finalized and a Small Wind Certification Council is now able to certify equipment for compliance to the technical standard. "Many in the industry see certification as a strong sign of the industry's maturity and as a building block for lasting growth. In fact, the North American Board of Certified Energy Practitioners will also begin the process of certifying small wind turbine installation professionals in the fall of 2010," said Le.

According to Le, "Electricity prices across all sectors have risen by 6 percent since 2006 and this trend will continue. High prices of traditional electricity make alternative energy sources more competitive on an incremental-cost basis, particularly when factoring in renewable energy's other financial and intangible benefits."



Wind Turbine Industries Corp.

### Manufacturer List

**Aerostar, Inc.**  
Jason Barry  
508-636-5200  
www.aerostarwind.com

**Cascade Renewable Energy**  
Jessica Lehti  
866-544-5520  
www.swiftwindturbine.com

**Raum Energy Inc.**  
Dan Senick  
877-946-3979  
www.raumenergy.com

**Vestas**  
Scott Gros  
503-327-2000  
www.vestas.com

**Wind Turbine Industries Corp.**  
Chad Palmer  
952-447-6064  
www.windturbine.net

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# Tesla Motors acquires California factory

Tesla Motors has purchased the former NUMMI factory in Fremont, California, where it will build the Model S sedan and future Tesla vehicles. As recently as April of 2010, the NUMMI factory was used by Toyota to produce the Corolla and Tacoma vehicles using the Toyota production system. It is one of the largest, most advanced and cleanest automotive production plants in the world.

It is capable of producing half a million vehicles per year or approximately one percent of total worldwide car production. The award-winning plant was the first in North America to demonstrate Toyota Production System, a widely copied system that led to dramatic quality improvements and unprecedented manufacturing flexibility and worker satisfaction.

The Model S is expected to be the first pure electric premium sedan and is designed from the ground up to take full advantage of the electric vehicle architecture. The sedan, which Tesla unveiled in March 2009, has an anticipated base price of \$49,900, including a federal tax credit, and is intended to deliver the foremost design and technology in the automotive world. With an optional extended-range battery pack, the Model S will travel over 300 miles per charge.

The factory is located in the city of Fremont near Northern California's Silicon Valley, very near Tesla's Palo Alto

headquarters. The location means Tesla can hire best-in-class engineers in Silicon Valley. The short distance also ensures a tight feedback loop between engineering, manufacturing and other divisions within the company.

"The Tesla Factory effectively leverages an ideal combination of hard-core Silicon Valley engineering talent, traditional automotive engineering talent and the proven Toyota production system," said Tesla CEO Elon Musk.

"The new Tesla Factory will give us plenty of room to grow."

Toyota produced its last car there just several months ago. Tesla began discussions to acquire the site this spring, when it was also evaluating opportunities in Downey and Long Beach. The turnkey nature of the facility with its recent production of top quality vehicles and its considerable room for expansion made it stand out from other sites.

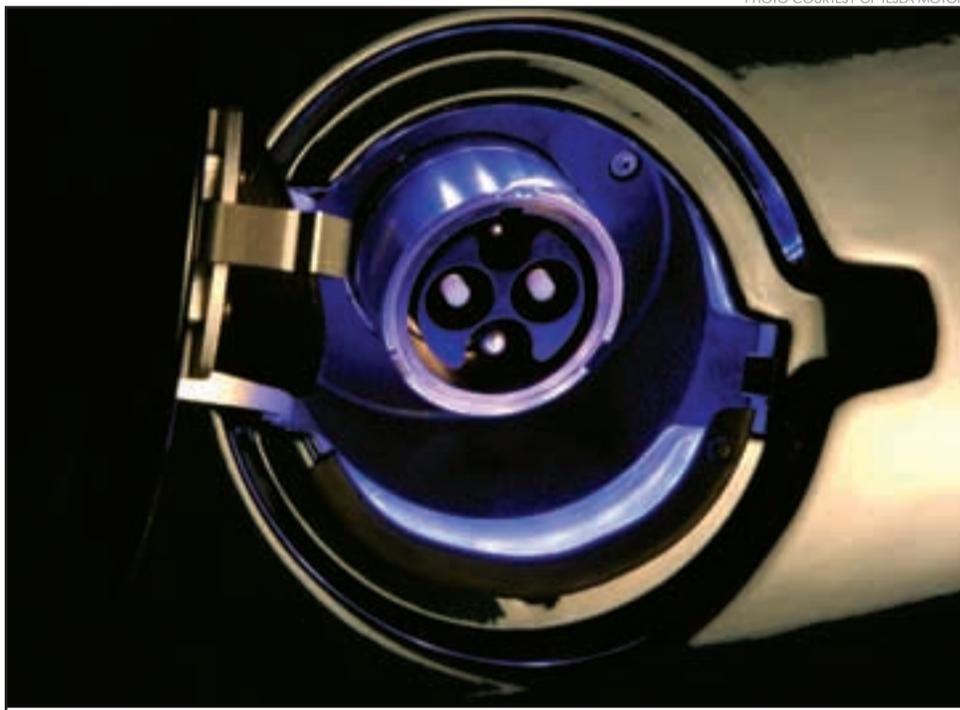


PHOTO COURTESY OF TESLA MOTORS

Where drivers once inserted gas nozzles to power their cars, Model S drivers will find an electrical connection instead. The cars' batteries hold enough juice to cruise approximately 300 miles before recharging.

# EPA sets thresholds for greenhouse gas permitting requirements

The United States Environmental Protection Agency (EPA) has announced a final rule to address greenhouse gas (GHG) emissions from the largest stationary sources, while shielding millions of small sources of GHGs

from Clean Air Act permitting requirements. The phased-in, common-sense approach will address facilities like power plants and oil refineries that are responsible for 70 percent of the greenhouse gases from stationary sources that threaten American's health and welfare.

"After extensive study, debate and hundreds of thousands of public comments, EPA has set common-sense thresholds for greenhouse gases that will spark clean technology innovation and protect small businesses and farms," said EPA Administrator Lisa P. Jackson.

EPA's phased-in approach will start in January 2011, when Clean Air Act permitting requirements for GHGs will kick in for large facilities that are already obtaining Clean Air Act permits for other pollutants. Those facilities will be required to include GHGs in their permit if they increase these emissions by at least 75,000 tons per year.

In July 2011, Clean Air Act permitting requirements will expand to cover all new facilities with GHG emissions of at least 100,000 tons per year and modifications at existing facilities that would increase GHG emissions by at least 75,000 tons per year. These permits must demonstrate the use of best available control technologies to minimize GHG emission increases when facilities are constructed or significantly modified.

Under the new emissions thresholds for GHGs that begin in July 2011, EPA estimates approximately 900 additional permitting actions covering new sources and modifications to existing sources would be subject to review each year. In addition, 550 sources will need to obtain operating permits for the first time because of their GHG emissions.

In April 2010, EPA set the first national GHG tailpipe standards for passenger cars and light trucks. When GHG emissions limits for these vehicles go into effect in January 2011, EPA is also required to address GHG emissions from stationary sources under the Clean Air Act's permitting programs, which it is doing in the plan outlined.

The final rule addresses a group of six greenhouse gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

EPA issued a proposed rule in October 2009 and held a 60-day public comment period. The agency received about 450,000 comments, which were carefully reviewed and considered during the development of this final rule.

# Chinese solar film production deal reached

Natcore Technology Inc. has completed an agreement with a Chinese consortium forming a joint venture to develop and produce film-growth equipment and materials that could significantly lower the cost of manufacturing solar cells.

At the heart of the joint venture is Natcore Technology's patented Liquid Phase Deposition (LPD) technology, licensed from Rice University where it was developed. LPD grows an anti-reflective (AR) film on a substrate in a room-temperature chemical bath, potentially making solar cells significantly cheaper and cleaner to produce. Existing technology uses a high-temperature vacuum furnace to grow the coating, requiring much more energy in the process and much more silicon to achieve the thickness needed to withstand the firing.

The new company, Natcore China, is a joint venture between Natcore Technology, based in Red Bank, NJ; the Zhuzhou Hi-Tech Industrial Development Zone, a government-supported zone in Hunan province; and Chuangke Silicon Ltd., a polycrystalline silicon producer. Natcore China will be 55 percent owned by Natcore Technology, with its partners holding the remaining 45 percent. The agreement is subject to approval by the Toronto Venture Exchange.

Under this agreement, Natcore China will have a life span of at least 20 years. It will have exclusive rights in perpetuity to develop and manufacture the AR coating equipment used in this technology, so long as it meets specified pricing and quality control standards, and to sell it to solar cell producers in China.

Natcore China will also have exclusive rights for a period of five years to develop and manufacture this equipment for sale anywhere in the world. The solar cell producers that buy this equipment may sell their output anywhere in the world.

Natcore Technology retains the unrestricted rights to license their LPD technology for all other applications.

Natcore China will be funded by an initial \$3 million investment consisting of \$500,000 dollars contributed by Natcore Technology, and \$2,500,000 dollars contributed by the Chinese Partnership.

With the signing of this agreement, Natcore China will immediately begin staffing, retooling and installing equipment in an existing \$250 million facility within the Hi-Tech Zone. They expect that first product shipments will be made within 10 months.

Under the agreement, Natcore China will complete the engineering and production of self-contained, self-replenishing film-growth equipment that will recycle the chemicals and water used in Natcore's LPD process. Until that is accomplished, however, the Chinese partnership envisions the incorporation of the technology into existing solar cell manufacturing lines through manual replenishment of the chemical bath. Thus Natcore China may be able to serve its first solar cell customers before product development is completed.

## AR EQUIPMENT SPOTLIGHT

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## A Closer Look

by Donna Currie

### Lamb Fuels

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Lamb Fuels' trucks are its biggest asset and liability. Greg Lamb balances maintenance and road time.

Greg Lamb described his business this way, "We take what would normally be a liability – or even a hazardous waste – and make it usable."

The company was started by Lamb's mother in 1985, and at the time she was importing fuel primarily from Mexico. In 1993, two local companies were looking for someone to take their fuel, and Lamb Fuels took advantage of that opportunity.

Now, trucks are dispatched across the country to pick up fuel from auto wreckers, scrap yards, aviation and government facilities and environmental companies. The company has about 20 employees, "and it's growing little by little," Lamb said.

Lamb wasn't involved in the business at the beginning. His career started with the Marine Corps. Afterward, he spent 10 years in the computer industry before working with his mother. Lamb said that the interesting thing about his mother's entrance into the fuel recycling business was that before she started the business she had been a waitress, but she saw an opportunity and she took it.

As far as his own involvement, he said, "Most people don't get to choose what they do; it chooses you."

When Lamb first joined the business, there were only a few customers in California. There weren't any employees at that time, and no company trucks for picking up the fuel. He took over the company in 2003. "I took it to the next level," Lamb said.

In 2005, Lamb started looking for new customers in the largest markets and "quickly realized Florida was a place we wanted to be." Lamb said that while California provides the largest volume, Florida has "an amazing amount of wrecking yards."

Now, Lamb said, "we're getting calls all the time," from people who want to recycle their fuel. "We service most of the country, from California to Virginia," and "we look forward to expanding into central Canada."

The volume of fuel handled increases each year, with a goal of reaching 3 million gallons by the end of the year. Recently the company "expanded into the aviation side." Lamb said. "We have a lot of room to grow."

While most of the customers are regular pickups, the company has also done some special jobs, including fuel from a rail company that was decommissioning refrigeration cars, a military base that had fuel tanks that needed to be emptied and a shipyard where a ship needed to be de-fueled.

When the trucks arrive at a location, the drivers sample the fuel to make sure it's acceptable, and it is filtered as it goes into the truck. Then it goes to one of Lamb Fuels' depots. "It's amazing how many people can use this product," Lamb said.

Lamb Fuels won't accept fuel that isn't clean enough. "It's got to look like gas," Lamb said. But for their efforts, the customers get paid for the fuel rather than paying for disposal. "They drain the fuel," Lamb explained, and then "it gets transferred to a holding tank" awaiting pickup.

The fuel that isn't good enough for Lamb Fuels isn't a lost cause. "There are other solutions out there for these companies," Lamb said. While Lamb Fuels won't take the fuel, they can recommend other companies who can burn the fuel. But that's not the end of the customer service. "We educate the recycler on how to keep the gas clean," Lamb said.

There are a few other companies in the country that pick up fuel, "but none that have focused on the recyclers like we do," Lamb said.

Like every business, this one has its challenges. "The trucks are our biggest assets and liabilities," Lamb said. The challenge is to keep them well-maintained so they can spend as much time on the road as possible.

The future for Lamb Fuels includes on-site filtration systems for customer locations that "we're hoping to roll out in the next few months." The details haven't been worked out yet, but he's eager to talk to people about it. In fact, he said that what he really enjoys is "getting in front of people and telling them about our company."

## Dow Kokam breaks ground on battery production plant

Dow Kokam's chief executive officer, Ravi Shanker, was joined by vice president Joe Biden, Michigan Governor Jennifer Granholm, The Dow Chemical Company chairman and CEO Andrew Liveris and other dignitaries at a groundbreaking ceremony to commemorate construction of Dow Kokam's new advanced, large-format battery production facility. The groundbreaking marks the first phase of construction for the high-tech, world-scale manufacturing facility, which will produce affordable lithium-ion batteries to supply the growing electric vehicle (EV) and hybrid electric vehicle (HEV) market.

According to Shanker, the new facility will enable the company to bring to market the most reliable and consistent energy solutions for its customers.

Dow Kokam envisions an 800,000 square-foot, large-format battery manufacturing facility that will be developed in two overlapping construction phases. When complete, the facility will employ nearly 800 people, and have the capacity to manufacture 1.2 billion watt hours of large-format affordable lithium-ion batteries – enough to power 60,000 fully electric or hybrid electric vehicles annually (assuming a 20 KWh battery system). The first phase of construction, supported by a \$161 million Department of Energy (DOE) Recovery Act grant, has a targeted capacity of 600 million watt hours and will employ up to 320 people at steady state.

Dow Kokam has committed to spend \$322 million for the first phase of

construction. Development of the facility will provide more than 1,000 regional construction jobs. When both phases of construction are complete, the project will have led to 2,720 direct and indirect jobs, and the facility will require up to 800 full time positions when fully operational.

The state of Michigan has invested more than \$180 million in tax incentives in the Dow Kokam joint venture to accelerate the state and nation's commercial success in advanced batteries. In August of 2009, the DOE awarded Dow Kokam \$161 million dollars in federal grants as part of the American Recovery and Reinvestment Act (ARRA) to build the production facility.

Prismatic lithium-ion batteries, to be produced in Midland, Michigan, will provide greater volumetric and gravimetric energy density than other battery technologies, and store up to three times more energy than nickel metal hydride (NiMH) batteries currently used in most hybrids.

Large-format battery cells made with Dow Kokam's technology have over ten years of proven operations life, while its pack design capabilities have been proven in more than 1 million kilometers of rigorous, on-the-road testing. Dow Kokam batteries have been adopted as the primary power source for equipment in industries ranging from transportation, marine, aerospace, defense and high-end industrial products.

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# Solar saves

■Continued from Page 1

SPG has patented the technology and invested nearly a million dollars over the past year in developing the next generation of floatovoltaics. “We are now talking to large water districts like Los Angeles. EPA is coming out with new standards for major water suppliers on how much chlorine can be put into water because it creates bromates and other chemicals that are carcinogenic. EPA water standards have already changed in the last two years and places like Los Angeles may be forced into multimillion dollar third-stage treatment facilities because of the chlorine,” said Rooney.

Solar energy is a hot topic and heavily featured in the media, but should be understood in the context of overall American energy consumption. According to the United States Energy Information Administration, all renewable sources, including solar, represent only 7.3 percent of the States’ energy consumption and of that figure wind represents 71 percent. Solar accounts for less than one percent and has reached its current market share only because of generous taxpayer funded state rebate programs, mandated state renewable energy targets and federal investment tax credits.

But all that subsidization appears to be a wise investment. It has driven competition to technology advancements and economies of scale that may soon make solar energy as competitive as many other energy sources with the benefit of being non-polluting.

Solar energy is growing at an impressive rate. According to the Solar Energy Industries Association (SEIA), at the end of 2009 the total installed utility-scale capacity including solar thermal-electric, and photovoltaics was 517 megawatts. “We expect to see more than 200 megawatts of utility-scale projects installed in 2010. Most interest-

ing are the 100-plus projects in the pipeline, many with utility power purchase agreements (PPAs) in place, totaling 17 gigawatts.” said Monique Harris, director of communications for SEIA.

Tom Rooney sees the cost of solar dropping every day. “The price of solar panels has come down dramatically. From a year and a half ago, totally installed, it’s down from about \$7.50 to \$8.00 dollars per watt to \$4.00 to \$5.00 dollars per watt depending on the application. Rooney believes that over the next five years incentives will go to zero and the cost of solar will drop to a point where it does not need incentives. “I’m not saying that solar will replace every form of electricity, but I think it will become a mainstay of domestic energy production.”

Whether for household use, industrial processes, wastewater treatment or irrigation, water requires a tremendous amount of electricity to power pumps and is the single largest expense for most water and wastewater jurisdictions.

It happens that solar energy, perhaps better than any other type of power generation, is particularly suited to water conservation and recycling for several reasons.

Solar electric production reaches its zenith during the hottest part of the day when many utilities charge the highest rates. Last year the Valley Center Municipal Water District in San Diego County, California completed a 1.1 megawatt solar system. Installed by WorldWater & Solar Technologies, Inc. it will offset 20 percent of the electricity needed by their largest pumping station. In addition, if the grid fails they can independently operate two or three 350 hp pumps on solar alone – a huge benefit during emergencies.

Solar electricity can pump, purify, treat and desalinate water while the sun shines and store it until sunset in tanks or reservoirs. Water pumped to higher elevation ponds or reservoirs during the day can be released as pumped storage



WorldWater's Mobile MaxPure freshwater system supplies drinking water for an orphanage in the town of Bon Repos outside of Port au Prince in the aftermath of the Haiti earthquake. The solar powered system was the only option when the electricity failed.

and drive turbines to generate electricity. Purified water can be dispensed via gravity for drinking at anytime.

A number of municipal water treatment authorities around the country have adopted solar energy to recycle wastewater and reduce electric costs. One of the largest municipal systems is a one megawatt photovoltaic plant nearing completion in Colorado for the City of Boulder’s wastewater treatment facility.

Comprised of 4,452 solar panels, it is capable of producing 1,552,000 kilowatt hours of electricity each year – 15 to 20 percent of the need. Developed by EyeOn Energy, Ltd. under a power purchase agreement, it will reduce the city’s electricity costs by an estimated \$43,000 annually. Alex Kramarchuk, EyeOn’s president noted: “We bookend the entire solar process and package the PPA. Many investors are unaware about solar as an asset class.”

Solar has also found a niche for off-grid purification of contaminated, brackish and salt water in developing countries, and in disaster situations. WorldWater, a Princeton, New Jersey based company, has pioneered its Mobile Max Systems. These small, portable, solar units are easily transported and can be operational within 30 minutes after arriving on site. Four cube-like units fit into a standard 40-foot container. An unfolding solar panel array provides power to operate an on-board water purification system to handle contaminated water and can produce up to 30,000 gallons of drinking water per day. A battery bank runs lights, power tools, computers and satellite phones. Other on-board filtration systems process brackish or seawater.

The prototype technology was first used after hurricane Katrina where it purified contaminated water for the entire town of Waveland, Mississippi for over seven months. Improved units have been used around the States, in Iraq, Afghanistan, Darfur and Ethiopia. “We had two machines in Haiti after the 2008 hurricanes providing drinking water for victims through the French Red Cross and other aid groups. They were still operating there when the

earthquake happened. We shipped another unit after the earthquake and have another on the way,” said Mickey Ingles, WorldWater’s vice president of operations.

With predicted shortages of fresh water for drinking and irrigation in the western states, it is likely that solar will play an increasing role in generating electricity to recycle seawater into freshwater at desalination plants. According to the International Desalination Association, there are over 13,000 desalination plants worldwide producing over 12 billion gallons of fresh water per day. But there are only a handful of small plants in the United States due to the current high costs of energy needed for desalination and the general availability of inexpensive fresh water.

But things are changing. Southern California currently imports over 90 percent of its water, primarily from the Colorado River and northern California. Despite aggressive conservation measures, shortages are occurring most severely in agriculture. Several pilot and small desalination plants are currently operating on the west coast and mega plants capable of producing up to 50 million gallons per day are under development.

While the intermittency of solar electric generation is problematic for grid operators, it will be of less concern to desalination. It can help plants cut peak rate prices from utilities as well as power pumped storage to hopefully deliver affordable water.

Tom Rooney at SPG Solar had a parting prediction. “I believe you are going to see the confluence of three major technologies over the next ten years: solar becoming so economically competitive that it’s mainstream; battery technology advancing so solar energy can be stored and dispensed day or night; smart grid technology that breaks down the exchange of electricity like the Internet. We will morph from massive utility plants with huge transmission lines to millions of nodes of clean electrical production with the capability of trading electrons back and forth using a smart grid.”



The City of Boulder, Colorado is nearing completion of a one megawatt solar electric system that will help power its wastewater treatment plant.

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