Environmental Services

Spotlight:

Sustainability Page 10

Sustainability is transforming how businesses conduct operations. Industry executives define sustainability and provide their perspective on its industry and business-level impact and areas of future growth and investment opportunity.

Oil Collections & Re-Refining Page 20

The used oil market is continuing to experience volatility, and recyclers are approaching expansion with caution. Investors with a long-term view remain optimistic about the industry's growth prospects and continue to seek consolidation opportunities across the value chain.

December 2012

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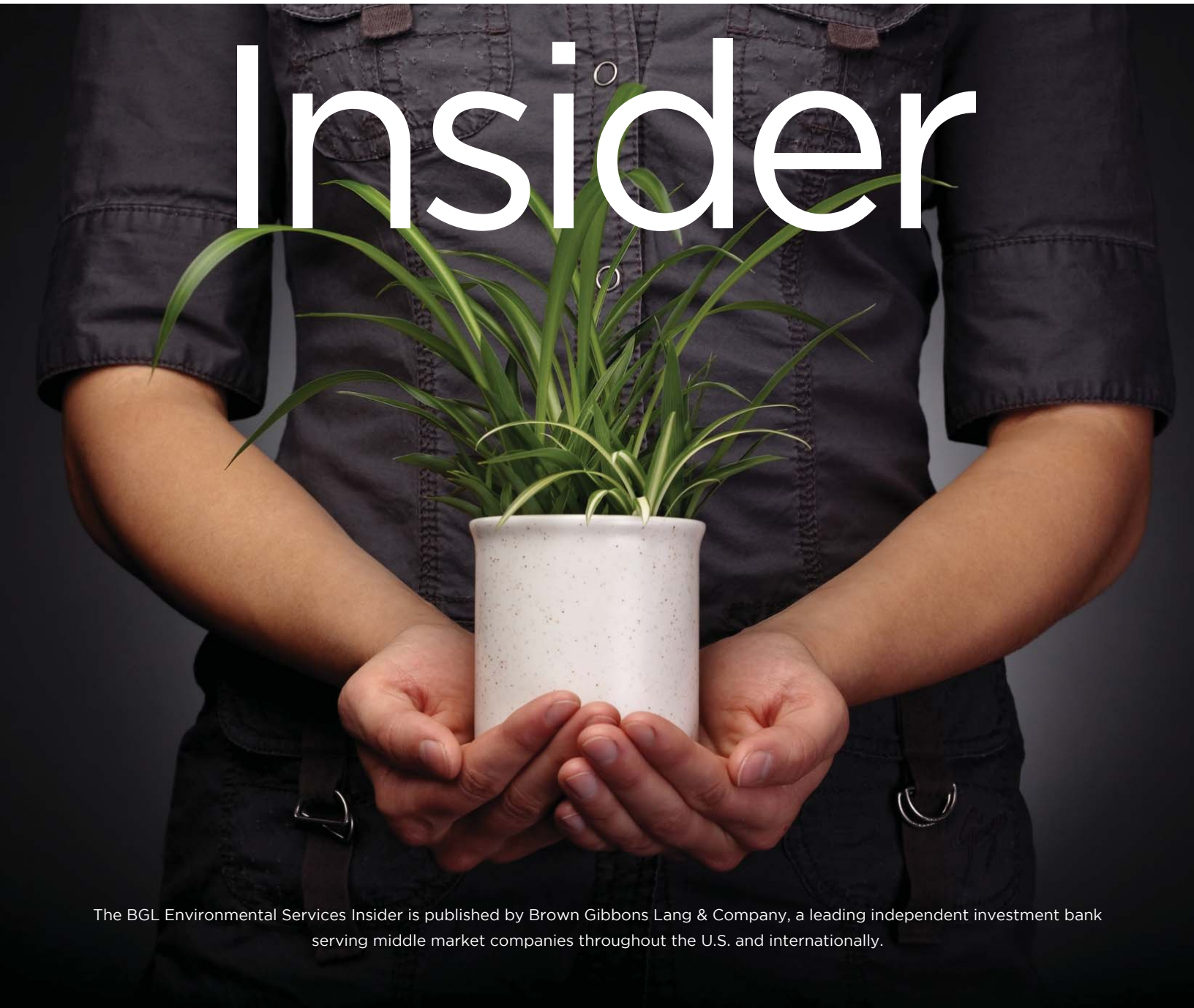

Insider

The BGL Environmental Services Insider is published by Brown Gibbons Lang & Company, a leading independent investment bank serving middle market companies throughout the U.S. and internationally.

The Environmental Services Insider discusses valuation metrics, recent mergers and acquisitions and capital markets activity, and select sector commentary for BGL's core focus areas within the environmental services industry:

- *Solid Waste (Non-Hazardous)*
- *Special Waste (Hazardous as well as other non-traditional waste streams)*
- *Environmental Consulting, Engineering & Construction (EE&C)*
- *Metals Recycling & E-Waste*
- *Reclamation & Remediation*
- *Waste-to-Energy (WtE)*
- *Cleantech*

Feature spotlights present our views and views of the market on certain sectors gathered through primary research and industry-focused transaction expertise.

M&A Activity

- Overall middle market M&A volume in 2012, based on number of announced transactions with deal values below $500 million, was up 6.7 percent over the prior year, with the fourth quarter seeing a sharp increase in tax driven deal flow.
- Valuations continue to remain healthy, with reported median EBITDA multiples for strategic and financial buyers of 8.1x and 7.7x, respectively, in December, according to Standard & Poors LCD (Page 4). Quality companies continue to attract premium valuations in the marketplace.
- Environmental services M&A activity continues to show positive trends, with third quarter deal volume up 35 percent over the year ago period. Special Waste continues to capture an increased share of activity, representing 33 percent of deal flow through September. Notable deals include Waste Connections' $1.3 billion acquisition of oilfield services company R360 Environmental Solutions in September and Clean Harbors' $1.25 billion purchase of Safety-Kleen in December.
- Middle market lenders remain active and are aggressively supporting buyout activity. Leverage mulitples remain elevated in a competitive financing market, with acquisition financing multiples reaching 3.9x senior leverage and 4.5x total leverage through December, reported S&P LCD (Page 4).

Industry Valuations

- The public equity markets showed positive gains in 2012, with the S&P 500 up 13 percent year-over-year (Page 27). Public composite indices in Waste-to-Energy, Special Waste, and EE&C outperformed the broader market, led by Waste-to-Energy which was up 27 percent year-over-year. LTM EBITDA valuations (Page 26) expanded from Q3 '12 levels (Page 25).

**As of December 31, 2012.*

Operating Highlights

- Volume and pricing remain under pressure for traditional solid waste companies. The operating environment is expected to remain challenging with slow improvement moving into 2013. Companies are seeking diversification in nascent, high-growth waste streams, illustrated by Waste Connections' expansion in oilfield waste with the R360 Environmental Solutions acquisition.
- Public special waste companies are reporting increasing demand for environmental and industrial services. The marquee acquisition of Safety-Kleen by Clean Harbors solidifies its market leading position and diversification into re-refining waste oil and expanded solvent recycling. Cyclical biofuel and used oil markets are undergoing a period of volatility; however, fundamentals are supportive of long-term growth. Oilfield waste and medical waste continue to show solid organic growth.
- Market conditions remain challenging for metals recyclers. Slower global growth rates and economic and political uncertainty led to declining prices, weak demand, and reduced scrap availability in the quarter. The slow economic environment and tight supply conditions are expected to drive more consolidation.
- Commercial markets are showing strong growth with oil and gas cited as a high growth area. The public sector is expected to remain challenged with ongoing budget pressures at the federal, state, and local levels. Uncertainty surrounding the fiscal cliff clouds visibility on public programs. International expansion is cited as a significant private sector growth opportunity.

For more information on how BGL's Global Environmental Services Practice can assist your company, please contact:

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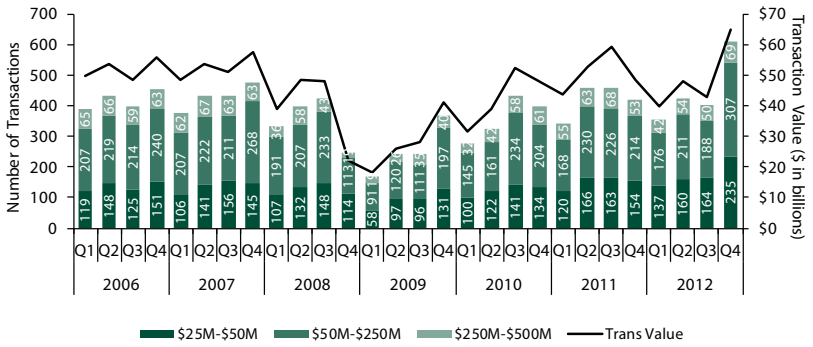
Mergers & Acquisitions
Overall M&A Activity

Mergers & Acquisitions Activity

Middle Market M&A Activity

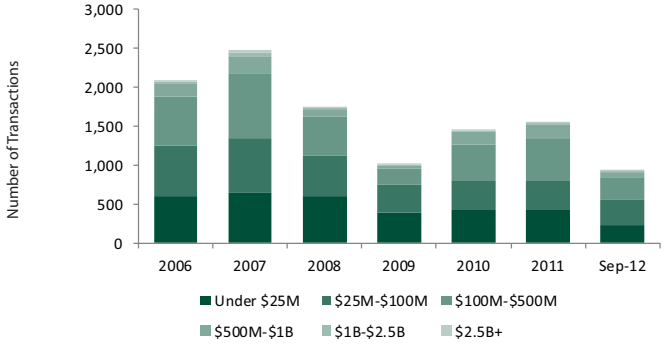


Based on announced deals, where the primary location of the target is in the United States.
Middle market enterprise values between $25 million and $500 million.

Source: S&P Capital IQ.

Private Equity Transaction Activity

Transaction Count by Deal Size

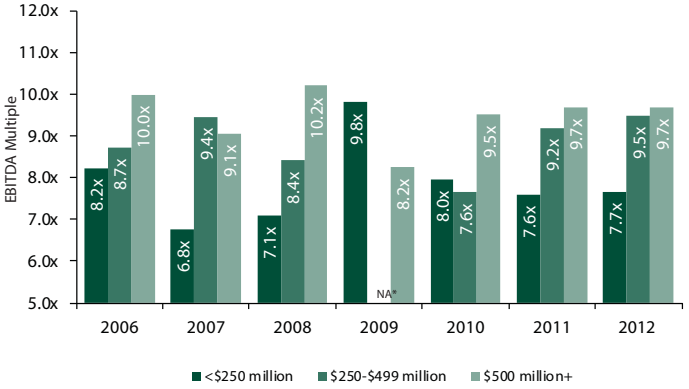


Counts only include deals with disclosed transaction values.

Source: PitchBook.

Trends in Valuation

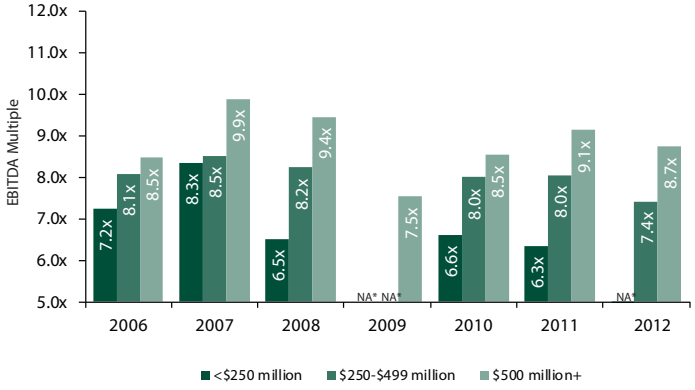
Transactions with Strategic Buyers



**NOTE: Data not reported due to limited number of observations for period.*

Source: Standard & Poors LCD.

Transactions with Financial Buyers

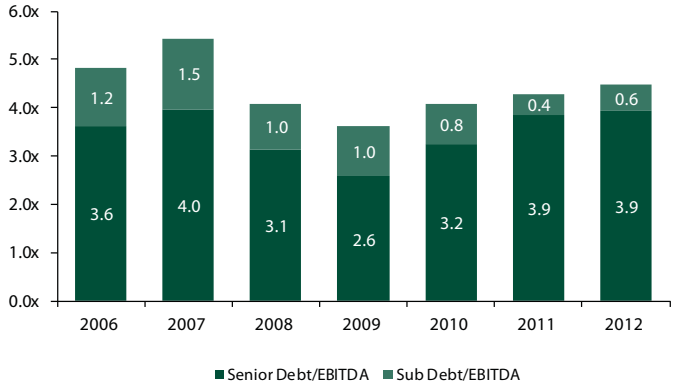


**NOTE: Data not reported due to limited number of observations for period.*

Source: Standard & Poors LCD.

Acquisition Financing Trends

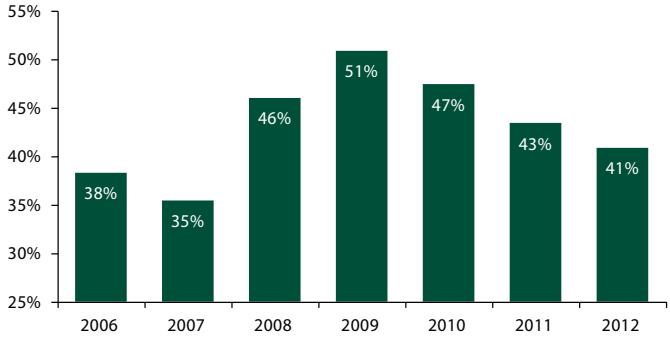
Leverage



Middle market enterprise values between $25 million and $500 million.

Source: Standard & Poors LCD.

Equity Contribution



Middle market enterprise values between $25 million and $500 million.

Source: Standard & Poors LCD.

Notable M&A Activity in Solid Waste

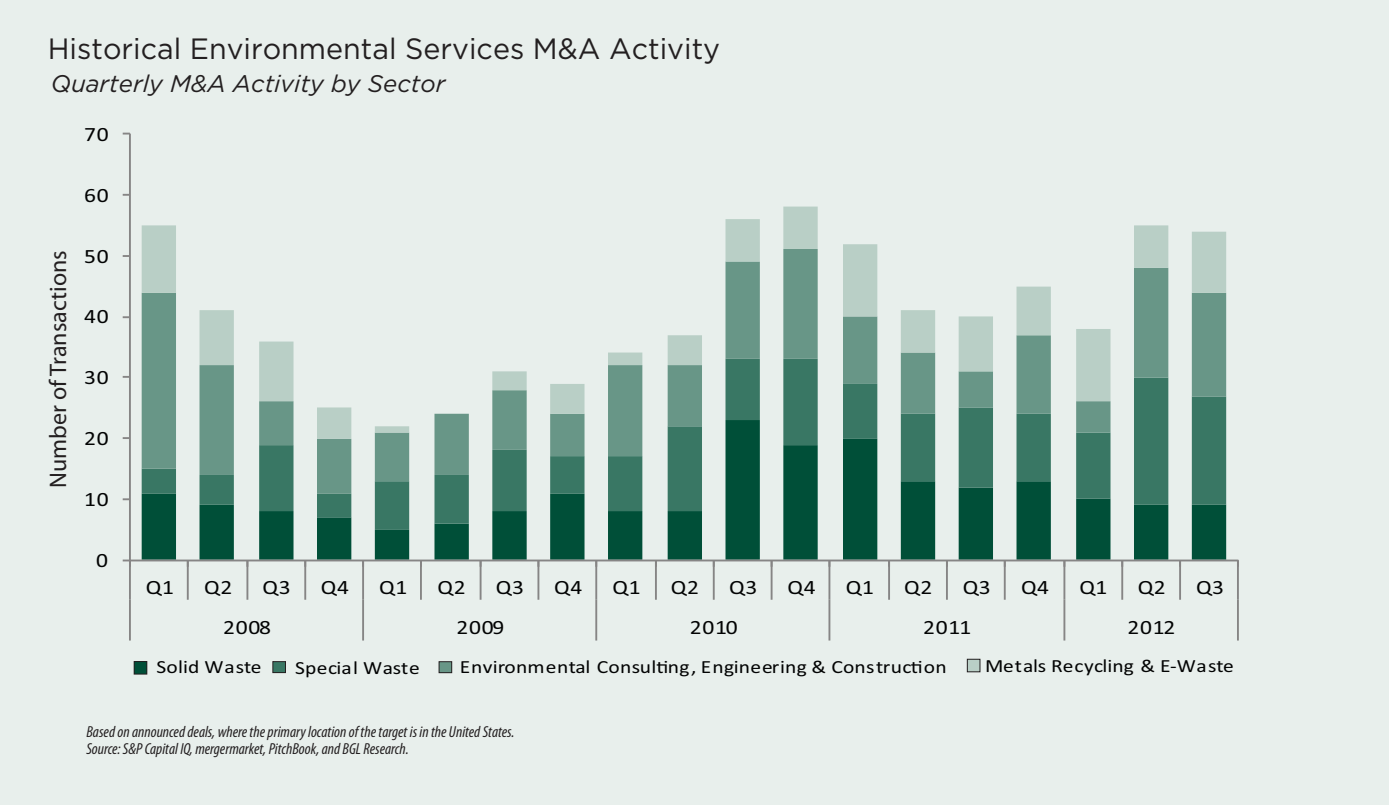
SOLID WASTE

In December 2012, **Casella Waste Systems Inc.** (NasdaqGS: CWST) acquired **Blow Brothers Inc.** (dba Bestway Disposal Services and BBI Waste Industries (BBI)). Founded in 1953 and based in Brentwood, New Hampshire, BBI provides solid waste collection, transfer, and liquid waste services in seven locations in New Hampshire and Maine. The company also operates a portable toilet service and supplies roll-off containers for contractors and individuals conducting renovations, clean-outs, and construction projects. BBI collects and transfers roughly 105,000 tons of solid waste and recyclables. Casella expects to internalize close to 80 percent of the material at its facilities, according to a company statement. BBI will add $20 million in annual revenue and serve as a growth platform in several new market areas. The $22.5 million purchase price consists of $20 million in cash and 625,000 shares of Casella stock. **Transaction Multiple: 1.1x Revenue**

In November 2012, **Progressive Waste Solutions Ltd.** (TSX: BIN) acquired **Choice Environmental Services, Inc.** from **Swisher Hygiene Inc.** (NasdaqGS: SWSH). Founded in 2004 and based in Fort Lauderdale, Florida, Choice provides residential, commercial, and industrial solid waste and recycling services to 200,000 residential and 7,500 commercial/industrial customers in south and central Florida. The company has six hauling operations, one transfer station, and one material recovery facility with 320 employees and 150 collection vehicles. The company processes about 150,000 tons annually.

The purchase will increase BIN's scale and add route density and increase productivity on collection routes in its U.S. South segment. The new collection assets will feed into the company's landfill network (particularly the J.E.D. landfill in the southeast), increasing the internalization rate in the region. The $123.3 million deal valued Choice at **1.7x Revenue and an estimated 8.0x-8.5x EBITDA**.

In November 2012, **ReEnergy Holdings LLC** acquired C&D waste hauler and recycler **United Waste Management Inc.** of Woodbridge, New Jersey. The purchase is expected to increase ReEnergy's presence in the eastern New England market, particularly Boston, and will enhance its ability to convert recovered wood into high-quality fuel to generate renewable energy. ReEnergy operates eight renewable energy generation facilities in New England and northern



SOURCE: S&P Capital IQ, PitchBook, Waste & Recycling News, Recycling Today, Equity Research, and Company Filings.

Notable M&A Activity in Special Waste

SOLID WASTE (continued)

New York and two C&D material processing facilities that serve the eastern New England/Boston metropolitan area marketplace. The move will further ReEnergy's strategy to "build a vertically integrated renewable energy company," said ReEnergy CEO Larry Richardson in a press release announcing the transaction.

In October 2012, **Advanced Disposal Services Inc.** acquired Tennessee waste hauler and landfill operator **Eco-Safe Systems LLC**. Based in Blountville, Tennessee, Eco-Safe operates a MSW and C&D landfill and provides disposal services for Kingsport, Tennessee. The acquisition marks Advanced Disposal's entry into Tennessee. The company expects the MSW landfill to accept about 800 tons per day of waste from northeast North Carolina, southern Virginia and eastern Tennessee, including waste collected from Kingsport residents and businesses, according to a company news release.

In September 2012, private equity firm **Kinderhook Industries** acquired **Rizzo Environmental Services, Inc.** Founded in 1965 and based in Sterling Heights, Michigan, Rizzo offers curbside collection of municipal solid waste, recycling, and compost to 16 municipalities throughout southeast Michigan. The investment will enable the company to continue to expand its service footprint throughout the region. Financing for the transaction was provided by Comerica.

Waste Management, Inc. (NYSE: WM) completed several tuck-in acquisitions, including the purchase of **two Tennessee recycling facilities** from **QRS Inc.** in December; Fernley, Nevada-based **TrashPros, LLC** in September; and **Land and Lakes Company** based in Park-Ridge, Illinois and Austin, Minnesota-based **Best Disposal LLC**, both in August.

SOLID WASTE (Waste-to-Energy)

In December 2012, **Covanta Holding Corporation** (NYSE: CVA) purchased the **Delaware Valley Resource Recovery Facility**, operating as Covanta Delaware Valley L.P., in Chester, Pennsylvania, from GE Energy Financial Services for $94 million in cash. The transaction includes the acquisition of approximately $122 million cash collateral trust and the assumption of $64 million in facility project debt principal, according to a news release. Covanta operates and previously leased the Delaware Valley facility from GE Energy Financial. The facility has a processing capacity of approximately 2,700 tons per day, serving Delaware County and surrounding communities.

SPECIAL WASTE

In December 2012, **Clean Harbors, Inc.** (NYSE: CLH) completed the acquisition of **Safety-Kleen Inc.** in a $1.25 billion transaction. Founded in 1963 and headquartered in Plano, Texas, Safety-Kleen is the largest used oil recycling and re-refining, parts cleaning, and environmental solutions company in North America. The Oil Re-refining segment re-refines used oil into base and blended lubricating oils for sale to third-party distributors, retailers, government agencies, fleets, railroads, and industrial customers. The Environmental Services segment provides parts cleaning services, containerized waste services, vacuum services, and oil collection services. The transaction represents an exit for investment firms **Contrarian Capital Management, L.L.C**, **JPMorgan Chase & Co.** (NYSE:JPM), and **Highland Capital Management Corp.**, which acquired the company in 2004. **Transaction Multiples: .93x Revenue and 7.8x EBITDA**

In October 2012, **Waste Connections Inc.** (NYSE: WCN) completed the acquisition of **R3 Treatment Inc.** (dba R360 Environmental Solutions, Inc.) in a $1.3 billion cash transaction. R360 provides environmental oilfield waste management services, which include landfill-waste disposal, land treatment process, washouts, oil reclamation, transportation, waste collection, and production water disposal services. The buy signals WCN's move to diversify its revenue base from traditional solid waste services into end markets offering strong secular growth stories such as special waste. The transaction represents an exit for investment firms **Paine & Partners, LLC**, **Tinicum Capital Partners**, **Blue Sage Capital**, and **Energy Special Situations Funds**, which provided expansion capital to the company in 2010. **Transaction Multiples: 4.3x Revenue and 8.0x-9.0x EBITDA (estimate)**

In September 2012, **Vertex Energy, Inc.** (OTCPK: VTNR) acquired substantially all of the assets and liabilities of **Vertex Holdings L.P.** in a move to leverage resources as a vertically integrated company that services the full value chain within the oil recycling industry, from feedstock collection through processing and end-product sales, according to a company statement. The $28.7 million purchase price consisting of cash, VTNR shares, and contingent consideration, valued the company at **.8x Revenue and 5.2x EBITDA**.

SOURCE: S&P Capital IQ, PitchBook, Waste & Recycling News, Recycling Today, Equity Research, and Company Filings.

SPECIAL WASTE (continued)

In August 2012, private equity-backed **A-Gas International Holdings Ltd.** acquired **RemTec International** (dba Reclamation Technologies, Inc.). Founded in 1986, RemTec provides products and services involving Ozone Depleting Substances (ODS) and substances high in Global Warming Potential (GWP) on a worldwide basis. The company's patented and proprietary equipment is used to recover and reclaim halons and their replacement agents used in the fire protection industry and CFCs, HCFCs, and HFCs used in refrigerant and HVAC applications. RemTec's capabilities represent a complete "end-to-end" solution for clients' controlled halocarbon needs. A-Gas is a portfolio company of U.K. sponsor **LDC Ltd.** which acquired the company in 2011.

ENVIRONMENTAL CONSULTING, ENGINEERING & CONSTRUCTION

In December 2012, private equity-backed **Geo-Solutions, Inc.** acquired **Environmental Barrier Company, LLC** (dba Geo-Con), a Pittsburgh, Pennsylvania-based provider of environmental remediation, wetlands mitigation, enhancement and restoration, and geo-technical construction services. The company was founded in 1979 and operates regional offices located in Florida, Colorado, and Pennsylvania. Geo-Solutions is backed by **RAF Industries**, which acquired the company in February 2012. The New Kensington, Pennsylvania-based company provides construction solutions for environmental and civil engineering problems involving soil and groundwater.

In November 2012, **Terracon Consultants, Inc.** acquired Roseville, California-based **Earthtec, Inc.** Founded in 1981, Earthtec provides geotechnical, environmental, special inspection, and construction materials testing services to clients in central and northern California. Client sectors include commercial/retail, industrial, healthcare, telecommunications, education, government, and architecture/engineering/construction. The transaction follows the August purchase of **IHI Environmental Inc.** Founded in 1980 and based in Salt Lake City, Utah, IHI provides industrial hygiene, occupational safety, and environmental consulting services in the western United States. The company offers consulting services in the areas of environmental, natural resource conservation and protection, asbestos and lead-based paint, regulatory permitting and compliance, public health research, health and safety training, and organizational sustainability. IHI has additional office locations in California, Denver, Phoenix, and Seattle.

In August 2012, **New Tech Global Ventures, LLC** acquired **Carr Environmental Group, Inc.** Founded in 1993 and based in Houston, Texas, Carr provides environmental consulting services to the private sector and governmental agencies in the United States and Gulf of Mexico. The company specializes in compliance for the oil and gas industry. Carr offers air quality services, environmental permitting and planning services, environmental site assessments, and remediation and site closure services.

In August 2012, private equity firm **Littlejohn & Company** completed the add-on acquisition of **Soil Remediation**, a provider of soil treatment and recycling services for existing portfolio company **Clean Earth**. Clean Earth was acquired in an LBO in October 2005. The transaction represents the second add-on for the company, following the November 2011 purchase of Kleen Soil.

METALS RECYCLING AND E-WASTE

In December 2012, **Metalico Inc.** (AMEX: MEA) expanded in western New York with the acquisition of Bergen, New York-based metals recycler **Bergen Auto Recycling LLC**. Metalico plans to significantly expand the location's salvage car buying capabilities and continue its pick-and-pull auto parts business while securing additional supply to feed its auto shredding facility in the Buffalo, New York area, according to a company statement.

In December 2012, **Sims Recycling Solutions, Inc.** (SRS), a subsidiary of **Sims Metal Management Limited** (ASX:SGM), acquired Canadian electronics recycler **Genesis Recycling Ltd.** Founded in 1994, Langley, British Columbia-based Genesis provides recycling solutions to business, government, and industrial customers for electronics and small appliances. With its presence in Ontario and eastern Canada, the acquisition will allow Sims to enter western Canada and further strengthen its North America SRS electronics recycling business, according to a company statement.

The acquisition follows the purchase of **E-Structors, Inc.** in September 2012. Founded in 2003 and based in Elkridge, Maryland, E-Structors provides electronics recycling and document destruction services to companies in Maryland, Washington D.C., and Virginia. The company offers computer recycling, information technology asset disposition, onsite hard drive destruction, office equipment recycling, cell phones recycling, smart phones recycling, and tablets recycling services. E-Structors serves educational and financial institutions, government agencies,

SOURCE: S&P Capital IQ, PitchBook, Waste & Recycling News, Recycling Today, Equity Research, and Company Filings.

Notable M&A Activity in Metals Recycling & E-Waste

METALS RECYCLING AND E-WASTE (continued)

health care systems and medical centers, private and public corporations, and electronics retailers.

In November 2012, **SA Recycling LLC** purchased the Arizona scrap metal recycling assets of **Sims Metal Management Limited** (ASX: SGM) for $35 million in cash. SA Recycling is a joint venture owned by Sims and Anaheim, California-based Adams Steel LLC. The JV has operations in California, Nevada, and Arizona. Assets acquired include two scrap metal recycling facilities in Phoenix and Tucson, Arizona.

In October 2012, **Arrow Electronics, Inc.** (NYSE: ARW) completed the acquisition of electronic waste and recycling company **Redemtech, Inc.** Based in Columbus, Ohio, Redemtech is a subsidiary of Micro Electronics Inc. The company employs 400 in Ohio, Nevada, and Virginia and generates sales of approximately $60 million. The acquisition expands Arrow's footprint and capabilities, furthering its strategy to build out a global EAD platform.

In October 2012, **GTSO Resources**, a subsidiary of **Green Technology Solutions, Inc.** (OTCBB: GTSO) acquired Brooklyn, New York-based **Global Cellphone Buyers**, an electronic waste recycling company, in a move to... "optimize recovery of gold, lithium, and rare earths from unwanted cell phones that would otherwise end up in the trash," according to GTSO CEO Paul Watson in a press release announcing the transaction.

In September 2012, **Alter Trading Corporation** expanded its footprint in Wisconsin with the acquisition of Milwaukee-based scrap metal recycler **Miller Compressing Company**. Founded in 1887, Miller processes ferrous and nonferrous scrap from five recycling locations in Wisconsin and Illinois. Miller Compressing's expanded processing capabilities, including an aluminum furnace, heavy media processing, and electronic recycling, will allow Alter to deliver additional value to its customers. With the acquisition, Alter now operates 16 processing locations in Wisconsin and a total of 43 metal recycling facilities in the United States. Alter is keeping the Miller Compressing name and will operate the business as a subsidiary of Alter Trading Corporation, according to a press release announcing the transaction.

In September 2012, **Sadoff Iron & Metal Co.** announced it was acquiring **Midwest Metals Recycling, Inc.** of Omaha, Nebraska. Sadoff has an existing scrap metal operation in Lincoln. Midwest Metals was founded in 1991 as an aluminum can recycler and expanded into recycling other metals such as copper, stainless steel, aluminum, and brass. Sadoff Iron & Metal is part of Sadoff & Rudoy Industries, LLP, which is based in Fond du Lac, Wisconsin.

In August 2012, **Sims Metal Management Limited** (ASX:SGM) acquired scrap metal recycler **David's Auto Shredding, Inc.** of Mobile, Alabama. The purchase of the southern scrapyard will allow Sims to access the supply chain for securing tonnage, the company indicated in an earnings call.

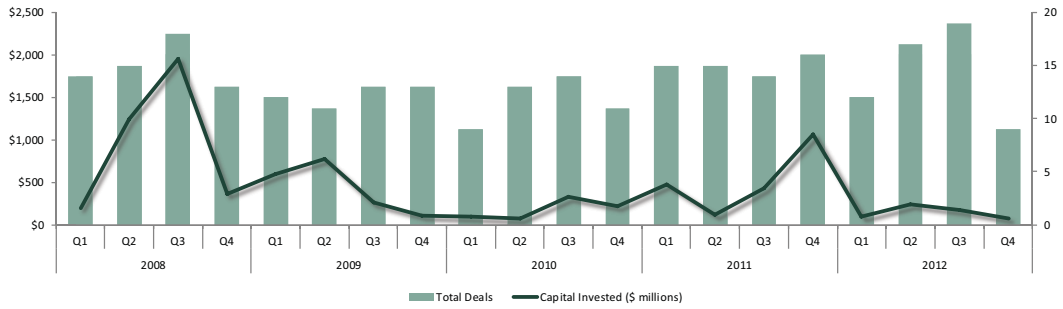
SOURCE: S&P Capital IQ, PitchBook, Waste & Recycling News, Recycling Today, Equity Research, and Company Filings.

Capital Raising

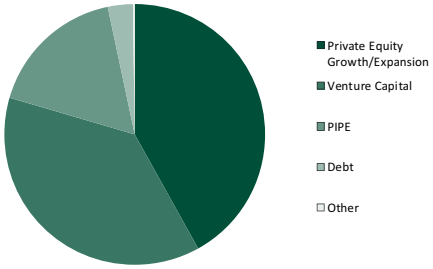
In 2012, a total of $584.4 million in private capital was raised in 57 transactions in the environmental services industry, with private equity representing the largest source of funding. Q3 '12 saw 19 transactions, the highest level of activity in the applicable data set, beginning in 2008. Transaction volume was on par with peak years in 2011 (60 transactions) and 2008 (60 transactions); however, funds flows were down, with a record $3.8 billion raised in 2008.

Capital Raising in Environmental Services

Quarterly Transaction Activity



2012 Breakdown by Transaction Type



(1) Non-control investments involving equity (later stage growth and expansion capital (private equity) and venture capital) and junior debt capital to fund growth.
(2) Environmental Services defined as BGL Sectors: Solid Waste; Special Waste; Environmental Consulting, Engineering & Construction; and Metals Recycling and E-Waste.

Selected Transaction Activity - Second Half 2012

RECENT FINANCING	COMPANY NAME	COMPANY DESCRIPTION	INVESTORS	FINANCING TYPE	FINANCING SIZE	CAPITAL RAISING HISTORY		
						ROUNDS OF FINANCING	INITIAL FUNDING DATE	TOTAL CAPITAL RAISED
Dec-12	GlassPoint Solar	Developer of solar industrial process heat generating equipment for oil recovery, waste water treatment and electrical power generation.	Chrysalix Energy Management, Nth Power, RockPort Capital Partners, Royal Dutch Shell	Later Stage VC	$26.0	4	Apr-11	$33.3
Oct-12	Glyeco	Transformer of hazardous waste into green products. The company transforms used glycols, a hazardous waste, into green products.	Undisclosed investors	PIPE	$4.2	2	-	$4.2
Oct-12	LanzaTech	Developer of technology for production of low-carbon fuels, using bacteria to convert industrial waste gases into fuels and chemicals.	Western Technology Investment	Debt - General	$15.0	5	Apr-07	$92.3
Sep-12	Camille Fontaine & Fils	Provider of waste management services including collection and transport, recycling, landfill, and transfer station.	Caisse de Depot et Placement du Quebec	PE Growth/Expansion	$12.5	2	Dec-09	$40.9
Sep-12	Urjanet	Provider of online data feeds that enable energy consumers to manage and evaluate company-wide power usage and carbon footprint impact.	GRA Venture Fund, Grotech Ventures, Imlay Investments	Early Stage VC	$4.0	2	Aug-11	$6.2
Aug-12	Conger & Elsea	Provider of risk analysis consulting services, primarily for the environmental services industry.	Peachtree Equity Partners	PE Growth/Expansion	nd	1	Aug-12	nd
Aug-12	Aqwise - Wise Water Technologies	Developer of wastewater treatment technology for industrial and municipal markets, which seeks to increase BOD and nutrient removal capacity.	Triveni Engineering	Later Stage VC	$4.5	3	Mar-08	$8.1
Aug-12	Avelis Biotechnology	Developer of technologies that provide organic formulations as alternatives to global food and water crises, focusing on IP that helps nutrient lifecycles.	Undisclosed investors	Seed Round	$0.3	1	Aug-12	$0.3
Jul-12	EcoScraps	Provider of organic, chemical- and manure-free lawn and garden products. The company's process recycles food waste into nutrient-rich products.	DBL Investors, Kickstart Seed Fund, Peterson Partners	Early Stage VC	$1.5	2	Jul-12	$1.8
Jul-12	Axine Water Technologies	Developer of wastewater treatment technologies. The company develops treatments for toxic organic pollutants in wastewater.	Business Development Bank of Canada, Chrysalix Energy Management	Early Stage VC	$1.5	2	Jul-12	$1.5
Jul-12	SDL Citadel	Provider of services to convert waste into renewable energy.	glendonTodd Capital	PE Growth/Expansion	nd	2	Jul-12	nd

Spotlight On: Sustainability

Sustainability is a leading strategic initiative. Cost control, social awareness, and regulatory policy have spurred industry leaders to adopt waste-friendly policies. Businesses are being tasked with analyzing green strategies and reducing environmental footprints and required to have transparent corporate responsibility programs and policies.

Sustainability is a buzzword that is driving a massive cultural shift and transforming how businesses conduct operations. Broadly-defined and not widely understood, we sought to find clarity from the corporate and investor community, asking industry executives for insight into how they think about sustainability–how they define it, its industry and business-level impact, and areas of future growth and investment opportunity. Executives from the fields of environmental engineering and consulting, waste management, and private equity shared their perspectives.

Key takeaways from the discussions:

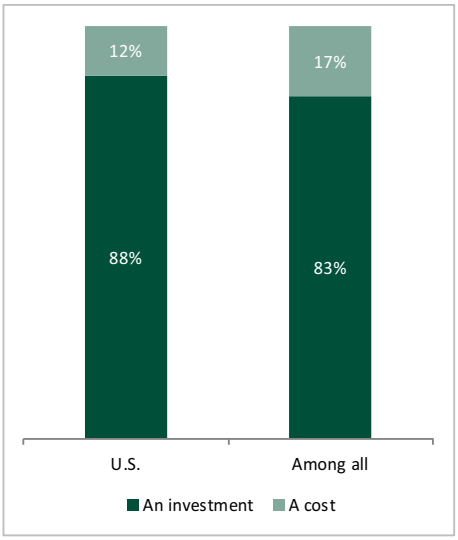
- Environmental consulting firms are growing because they are advising corporations and governments on sustainability practices, helping them implement practical solutions in the areas of zero waste, energy efficiency, and water and wastewater treatment.
- EPC firms are performing sustainability work by designing, constructing, and operating renewable assets and energy efficiency projects.
- Waste management companies are identifying ways to capture value in growing waste streams as zero waste initiatives accelerate diversion.
- Private equity is investing considerable capital resources in sustainability-oriented brands, technologies, and services, which offer above-average growth prospects and attractive returns.

Green is Smart Business

Sustainability is increasingly viewed as a source of revenue and business growth, with customer demand leading investment in sustainability initiatives.

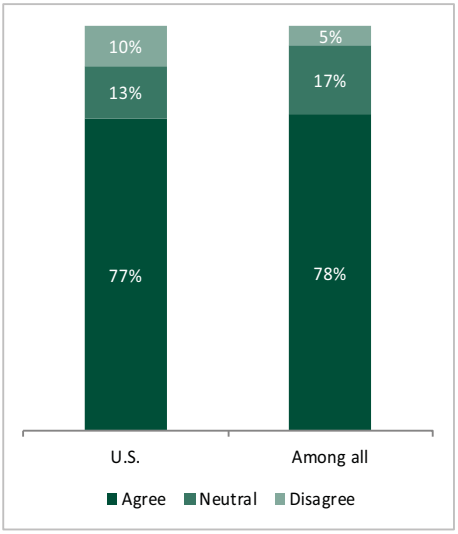
Sustainability is an investment, not a cost

Do you view spending on sustainability initiatives as an investment or a cost?



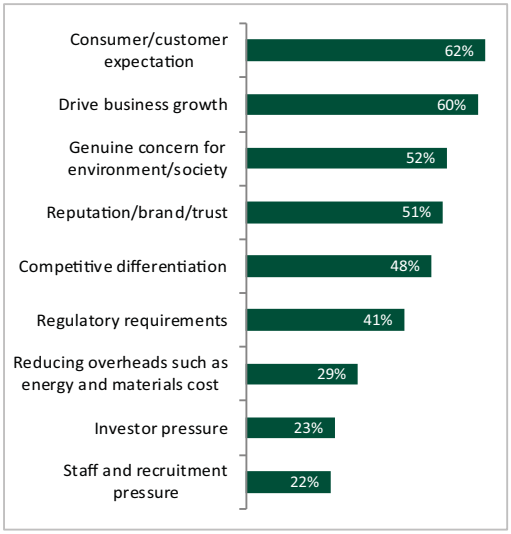
Sustainability is vital to future growth

To what extent do you agree or disagree that sustainability is vital to the growth of your business?



Customer demand primary driver of sustainable initiatives

Which of the following reasons best describe why your business is investing in sustainability initiatives?



Source: "Long-Term Growth, Short-Term Differentiation and Profits from Sustainable Products and Services," Global Survey of 250 Business Executives, Accenture, May 2012.

Sustainability defined

The sustainability movement is relatively new and is continuing to evolve. Definitions are broad and wide-ranging. Among the executives we polled, sustainability is:

"Being able to use or harvest a resource that you are not depleting or damaging and utilizing existing resources in an environmentally-friendly way. Companies that are providing technologies and services to solve environmental issues. Sub verticals include industrial services, traditional recycling, solid waste management, special waste disposal, and metals/e-waste collection/disposal."
Chris Sorrells, NGP Technology Partners

"Using resources in the most efficient and environmentally-friendly way, mainly in an effort to reduce carbon emissions."
Jay Gates, River Road Waste Solutions

"Technologies that use resources better, faster, and cheaper, which touches most areas of the economy."
Private equity investor of a $1.0 billion Greentech Fund

"Beneficial reuse of waste materials; diverting waste from landfills."
CEO of a Project Development and Engineering Company

"Diversion. Segregating what starts out as a waste product and ultimately finding a beneficial alternative use for the material as a secondary feedstock in a manufacturing process or to displace fossil fuels in energy production."
Ed Apuzzi, a former vice president and region manager at IESI Corporation and now with Roark Capital

"Being able to generate opportunities now while being mindful of the ability of future generations to create those same opportunities."
Wendy Schlett, GZA GeoEnvironmental

"Proactive consideration of the management of our environment, energy, and waste. Moving sustainability forward means that everything we do should prevent the creation of potential future environmental legacy issues."
Chris Blackburn, GZA GeoEnvironmental

"There are emerging discussions within the public sector focused on sustainability and resiliency, and I think that is the next thing we hear about after sustainability. If there is a natural disaster, how quickly do we respond and recover?" commented Chris Blackburn at GZA GeoEnvironmental. Extreme weather events are a major component of risk analysis for large manufacturers, Blackburn indicated. They are paying closer attention to how climate change is affecting weather patterns and ultimately may have an impact on their supply chain. "Many of our clients are saying to us, are we vulnerable if we lose power for two weeks? How do we keep going? This has implications for renewable energy. It might be back up energy supplies to preserve raw materials or to power a plant. That keeps people working, and it is good for the economy."

How are you assisting corporations and investors with their sustainability efforts?

"We tell our clients, we want to help you use the environment to grow your business. Ultimately we may not be involved in the development of 100 percent of a client's sustainability program, but we do work with them to assist them in achieving goals such as zero stormwater discharge, zero waste to landfill, 100 percent recycled or re-use of raw materials, carbon footprinting and greenhouse gas emission controls, or maximizing renewable energy options. Sustainability is a moving target. As consultants, we have to be willing to adapt and be flexible to support our client's initiatives."

"Typical requests for our services might include developing solutions for sustainably managing storm water for a business that has a large industrial footprint or multiple sites. As previously discussed, another is managing waste—finding new ways to recycle, reuse, or eliminate waste." *Chris Blackburn, GZA GeoEnvironmental*

"We are assessing the full scope of a business, its strategy, and its operations, to understand holistically what the company should be doing. We will look at energy, logistics, IT systems, procurement, etc., to provide a comprehensive strategy and make recommendations for how a business can make its operations more profitable due to the more efficient use of resources and create a win-win in terms of the environmental impact."
Andrew Malk, Malk Sustainability Partners

"We are helping customers keep waste out of landfills and recycle. We are working on different strategies to further extract value out of the waste stream through different types of recycling initiatives so that we can get more

Spotlight On: Sustainability

value out of our customer relationships. Companies have to make a corporate statement—we divert 20 percent of our waste. They want to be able to prove it. We are able to provide them with that data."
Jay Gates, River Road Waste Solutions

What are some of the biggest roadblocks or challenges to advancing sustainability projects or implementing sustainability initiatives in practice?

"I don't think anyone is going to say, we are not going to be sustainable. There is no road block except cost."
CEO of a Project Development and Engineering Company

"There is still an education gap in understanding the value of pursuing sustainability initiatives at the corporate level. "It is definitely an evolving market. I would say two-thirds of the time we are still educating potential clients and helping them get some perspective that sustainability issues are broader than they may have first realized and touch more parts of their business."
Andrew Malk, Malk Sustainability Partners

"We have to look at sustainability in new and creative ways, which takes forward thinking—for example, using technology to capture stormwater and wastewater and coordination of its containment with a renewable energy application to generate electricity or potentially recharging of a depleted aquifer. There are potential solutions that could increase profitability. It is also about our culture in the United States accepting and embracing some of these changes. In India, they do not think twice about the possibility that wastewater could be treated and returned to a drinking water supply. Such a concept is met with more scrutiny and resistance in the United States."
Chris Blackburn, GZA GeoEnvironmental

The United States still lags Europe in sustainability. "Europe embraced sustainability much more quickly, taking an approach toward management systems and cultural change versus the significant regulatory process that we created here in the United States," commented Wendy Schlett at GZA GeoEnvironmental. "It is our experience that the market is driving our clients' focus on sustainability." Requests such as those being made by the Carbon Disclosure Project and the SEC to measure and disclose greenhouse gas emissions risks are infiltrating the CEO board room. As companies begin to address these issues, it is becoming a competitive advantage, but also a means for identifying new opportunities to generate both growth and product innovations going forward. "Companies are seeing sustainability as more than just a cost on their bottom lines. They are seeing such a benefit from these initiatives that they are taking it down to their supply chain," Schlett said. "The large corporations—Wal-Mart, Bank of America, Ford, are starting to request that their suppliers look at greenhouse gas emissions not only qualitatively but also quantitatively, and they are beginning to institutionalize a standard approach for tracking their own performance as well as their suppliers' performance."

> *"We have to look at sustainability in new and creative ways, which takes forward thinking."*
>
> *—Chris Blackburn*
> *GZA GeoEnvironmental*

If you take away government funding, does your view on the return dynamics of certain types of sustainability projects change?

"It depends on the project. When you have a 30 percent tax equity credit, your return dynamics can change dramatically. If the current Administration comes out with a national renewable energy portfolio standard and all states are subject to 25 percent generation from renewable and alternative, that obviously is a step up. However, I doubt there are going to be any financial incentives like there were in the last Administration.

One of the issues is in the definition of renewables. For example, Ohio defines renewables as solar, wind, waste biogas, and waste heat. Cogeneration combines heat and power but is not included in the definition;

however, it is an alternative energy that goes toward energy efficiency. The only difference is that you cannot get renewable energy credits. I think you are going to see as much or more opportunity in alternative energy in the future, especially with the price of gas."

CEO of a Project Development and Engineering Company

Sector

Sustainability issues are getting attention in every industry and are unique to those industries—for example, in aviation the focus is on alternative fuels and engine efficiency; in consumer electronics, it is supply chain transparency and end of life issues. Generally speaking, the manufacturing sector is going to benefit from sustainability significantly, industry executives said, especially as they bring their supply chains into the process and request their suppliers to become more sustainable. "It is my experience that these progressive manufacturers are leading the charge," observed Wendy Schlett at GZA GeoEnvironmental.

According to a McKinsey & Company global survey[1] on sustainability, respondents in certain industries—energy, the extractive industries[2], and transportation—report that their companies are taking a more active approach to sustainability than those in other sectors, driven by potential regulatory and natural-resource constraints present in those industries.

In every major industry, there is now a set of active sustainability issues and each have their own trajectory. "There is an ongoing evolution that is taking place within industries, where you start with the Fortune 100 players, then the Fortune 500 players, and now it is trickling down to the middle market players," observed Andrew Malk at Malk Sustainability Partners, "where they are starting to realize, there is something missing in our strategy, in our brand, and each year that we go without addressing these issues we are taking on more risk."

Why are corporations pursuing sustainability initiatives?

[1] Source: "The business of sustainability," Global Survey of 3,203 Executives, McKinsey & Company. July 2011.

[2] Respondents from the coal, metal, oil and gas extraction, petroleum and natural gas distribution, petroleum refining, and other mining subindustries.

Cost

Cost savings was the leading driver cited by executives polled. In a global survey conducted by McKinsey & Company[1], cost replaced reputation as the reason companies are taking on sustainability. Corporations are looking for ways to become more energy efficient, reduce water usage, and reduce waste from operations. Sustainability is being incorporated into product design and manufacturing processes, all the way through to supply chain management and logistics to reduce environmental impact.

"Corporations see there is material cost savings to be realized by reviewing their operations with a lens of sustainability. Even well-managed businesses still are wasting a good amount of money in terms of their energy use and other resource use. Sustainability is part of business optimization. They are looking at the cost savings."
Andrew Malk, Malk Sustainability Partners

"In the enterprise, the sustainability decision is an economic one. And it is about getting data and using that data to make economically-advantaged decisions. That is the reason why sustainability-oriented technologies are being deployed. There has to be a fundamentally sound technology that makes economic sense. On the consumer side, there are some technologies and brands that are growing because consumers want to be more sustainable and will pay more for sustainable alternatives. We haven't found large companies willing to make the same types of decisions that consumers will.

> *"Corporations see there is material cost savings to be realized by reviewing their operations with a lens of sustainability."*
>
> *—Andrew Malk*
> *Malk Sustainability Partners*

Most of our companies are selling something with a value proposition that is sustainable but that is not the leading value proposition. We have found that if you lead with a sale about sustainability it is a tougher sale than if you lead with the savings or the operational improvement or the improved data."
Private equity investor of a $1.0 billion Greentech Fund

"Over the past few years, sustainability is being driven by economics versus climate change. Unless you have a branded consumer product, selling green at a premium is becoming more difficult."
Chris Sorrells, NGP Technology Partners

Spotlight On: Sustainability

"If a company is truly embracing sustainability, they are reorganizing their business model around it, and they are observing cost benefits through the changes that they are implementing within their sustainability initiatives."
Wendy Schlett, GZA GeoEnvironmental

Resource Management

With the growth of emerging economies and an aging infrastructure comes a strain on natural resources and increasing demand for energy and water. Corporations are looking to firms with the technical expertise to analyze these problems and derive solutions to conserve resources and mitigate the impact on the environment.

Reputation

There is a public relations benefit around the concept of sustainability such that it has become part of the corporate culture. Green is a point of competitive differentiation in the marketplace. For some companies, sustainability is core to their values, mission, and brand identity. There is also a liability in terms of stigma attached with market perception but also a real financial liability as standards and rules changes and as employee base changes.

"The aggregate and mining industry began to move in the direction of incorporating sustainability initiatives into their business model five to six years ago. Due to the fact that the industry does not determine the location of naturally occurring mineral deposits, it becomes necessary to demonstrate that the mining is undertaken with consideration for sustainable practices and in an environmentally responsible manner. They know that industry wide they combat negative perception on environmental issues. They are looking at sustainability as a means of overcoming the negative perception and doing something positive for the environment and the communities they operate within.

Aggregate and mining companies appropriately view sustainability as a means of being able to continue to operate and expand their businesses under public scrutiny. Mining companies require the support and approval of communities in order to obtain special land use permits and open a new mine. It has been observed that the companies that embrace stronger sustainability efforts and effectively communicate this to the public are more effective in acquiring necessary permit and public approval."

Wendy Schlett, GZA GeoEnvironmental

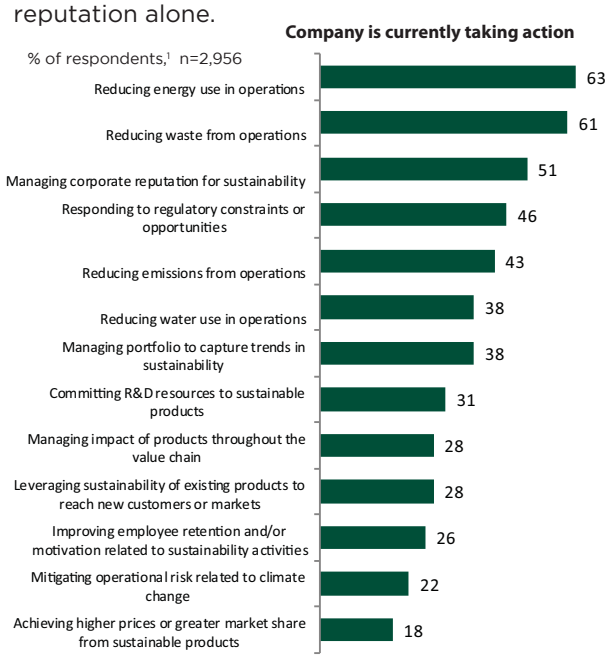
Supply Chain

A big driver of sustainability is supply chain requirements. Companies are looking to mitigate risk and are taking sustainability down to their supplier base and asking about their sustainability practices.

"We have IT clients that supply the large wireless carriers. They are receiving 19-page questionnaires on their sustainability practices. It is becoming "table stakes" that

Moving Beyond Reputation

Companies are embracing sustainability as a means to improve processes, pursue growth, and add value rather than focusing on reputation alone.



Global survey of 3,203 executives representing diverse regions, industries, tenures, company sizes, and functional specialties.

[1]Respondents who answered "don't know" or "none of the above" are not shown.

Source: "The business of sustainability," July 2011, McKinsey & Company.

in order to be a significant supplier you have to have a sustainability program. If you want to continue to have that business long-term, you are going to have to be able to respond to those questions. Wal-Mart is driving quite a bit of that in the marketplace, along with some of the large enterprise buyers in the supply chain, like Dell, HP, and Intel."
Andrew Malk, Malk Sustainability Partners

"We are beginning to see the manufacturing sector more frequently assessing the sustainability initiatives of their supply chain. Companies are evaluating both their upstream and downstream supply chain in order to understand the environmental and social implications their supply chain could project onto them. We are working with an automotive OEM to identify and measure what the supply chain is doing in terms of waste, greenhouse gas emissions, and water use to better understand the long-term risks that suppliers may contribute to a negative perception in the marketplace."
Wendy Schlett, GZA GeoEnvironmental

Regulatory

Regulation is requiring corporations to be sustainable; however, executives say that it is not the primary driver behind sustainability initiatives today. "Within the last three or four years, we have not seen significant new environmental regulation that has pushed companies," observed Andrew Malk at Malk Sustainability Partners. "It is not the main driver right now. It is coming from the market itself, i.e., customer and stakeholder requests."

One area of attention is regulation under Dodd Frank governing conflict minerals. "There is a requirement to identify the location and source supply of all raw materials, in order to ensure that these raw materials are not originating from areas of conflict, such as countries like the Congo and Rwanda, who are suppliers of gold and other precious metals. This requirement is affecting many industries, from the automotive market to computers and electronics," commented Wendy Schlett, at GZA GeoEnvironmental.

Waste

The culture of the business community has changed. Regardless of the cost, there is a need to address policies to move us closer to zero waste. Corporations, municipalities, and state governments are actively encouraging diversion efforts.

Regulatory complexity is growing. Disposal criteria and landfill bans lead to creation of new processing and recycling methods.

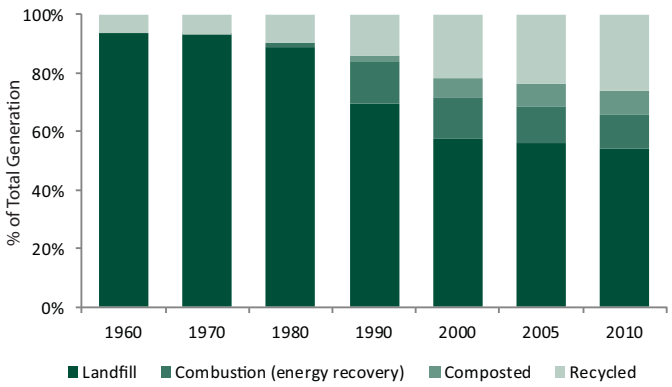
As less waste heads to landfills, waste companies are exploring ways to utilize material streams and convert them into valuable energy sources. Technology is playing a significant role in strategic growth, and given recent advancements, the cost of implementation and return on investment has become more attractive. Those companies that can identify such technologies are able to achieve considerable growth by converting captive waste streams into valuable energy and repurposed materials.

Waste Recovery

In the United States, disposal of municipal solid waste to a landfill decreased from 89 percent in 1980 to 54 percent in 2010.

Recycling and composting more than 85 million tons of municipal solid waste saved more than 1.3 quadrillion Btu of energy, the equivalent of over 229 million barrels of oil.

Municipal Solid Waste Management in the U.S.



Source: EPA.

Spotlight On: Sustainability

Ed Apuzzi, a former vice president and region manager at IESI Corporation who is now with Roark Capital, shared his perspective on how sustainability is impacting the solid waste industry.

How has sustainability generally affected traditional solid waste companies?

Biogas has been a big positive for the waste industry. It has created an additional economic stream that wasn't there five to ten years ago. We will continue to see biogas utilization grow as additional landfill gas sources are captured and as new programs for collecting and processing food waste utilizing anaerobic digestion are implemented. It is something that customers are requiring of us.

Recycling is in a sense a double-edged sword. It takes material from our landfills, but now we stand to gain economically for the value of those commodities that we are able to service. The scope of those services continues to increase. E-waste has become a big component of the business. Food waste is just beginning to gain traction and is growing.

Some of these sustainability efforts are government mandated like e-waste, where others like composting are customer-initiated at this point.

Recovery rates have improved but substantial opportunity remains. Are there certain waste streams that you are trying to monetize?

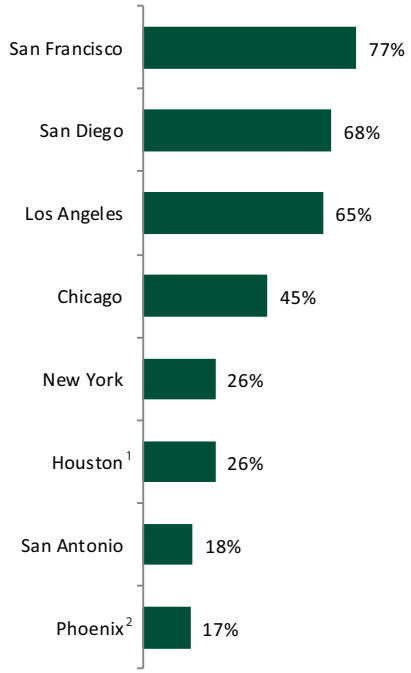
We are always looking for opportunities in any type of recycling infrastructure that make economic sense—single stream, dual stream, composting. We are expanding our ownership and operation of landfill gas to energy facilities and are finding new ways to utilize the gas by refining it into renewable natural gas which can ultimately be used to displace diesel as fuel in our collection vehicles. We are continually looking for other ways to make sure that we are as green as possible.

Aiming for Zero Waste

Municipalities are radically reducing waste sent to landfills, with many striving to achieve a goal of zero waste.

Seeking a Diversion

Diversion rates of selected cities



San Francisco has a waste-diversion rate of 77 percent—the highest in the nation—and has the goal to reach 100 percent by 2020.

In 2009, San Francisco became the first U.S. city to require food composting for residents and businesses.

[1]For residential and city operations; business data not available.
[2]For residential.

Source: "The Urban Quest for 'Zero Waste.'" The Wall Street Journal Sep. 2011.

Will technology eventually reach a level to divert waste into waste-to-value facilities or will landfills continue to hold the value that they've had?

It depends on time horizon and how much capital is going to be invested in these alternative technologies. We are beginning to see viable technologies to manage the organic fraction of the waste stream, which can account for up to one third of all waste. New conversion technologies, such as gasification, to process mixed waste and capture renewable energy are emerging, but have not yet been proven on a commercial scale or to be economically viable. Any alternative technology needs to be economically competitive with a waste to energy facility or with a landfill.

Corporations are bringing in sustainability consultants to help them adopt zero waste policies. How is the industry adapting?

We want to make sure that we can provide that type of customer with whatever level of service that they are looking for. If we have to figure out a way to recycle all of GE's waste or handle it in a way that makes them comfortable that it is not being landfilled, we are going to do that. We are always looking for different types of services that we can provide to those types of customers. While a large percentage of the waste is going to be recycled, some, in our opinion, cannot be recycled.

Organics Recycling

Organics diversion is garnering increased attention. Food waste comprises roughly 34 million tons or roughly 14 percent of the MSW stream in the United States. Less than 3 percent is recovered. "There is value in organics—electricity, fuel, compost, fertilizer—but there is a complexity to it," commented Jay Gates at River Road Waste Solutions. "The technologies are there. However, although facilities are increasing in number they are not widespread, so logistics becomes a cost factor. It comes down to, what is the value of the end product that you are able to extract from the material and is there enough margin in it to spend money and try to do it." A key consideration is knowing where the feedstock is coming from and that it is well contracted. "The challenge for the large anaerobic digestion projects is guaranteeing the fuel source," said an EPC contractor. "Your feedstock could be at risk if 30 percent is manure; farmers move their herds all the time." "The economic downturn and its impact on overall real estate development delayed many of the projects in the pipeline," added Chris Blackburn at GZA GeoEnvironmental. "I think there will be a lot more emerging in the near future as our economy recovers."

Market developments underscore that the pace of organics recycling is accelerating. Governments and municipalities are enforcing mandatory recycling of organic waste and instituting land bans. In June 2012, Vermont enacted regulation mandating recycling and composting of food and other organic waste.[1] Massachusetts is proposing regulation that would ban disposal of commercial and institutional food residuals in landfills and incinerators beginning in 2014.[1] Capital is being deployed in anaerobic digestion facilities to repurpose food waste. The largest commercial-scale, high solids anaerobic digestion system in the nation will be operational by January 2013, according to a company statement from Clean World Partners, with the capacity to process 100 tons of waste per day. Campbell Soup Company announced in November 2012 it will create the first commercial biogas power plant in Ohio, diverting to 35 to 50 percent of waste from its Napoleon production facility, reducing greenhouse gas emissions by approximately 16,000 metric tons per year, or the equivalent of 3,000 cars. Caterpillar invested in two organics-based waste-to-energy projects in September 2012. Casella Waste solidified its commitment to organics recycling, announcing in September 2012 that it was renaming its New England Organics business as Casella Organics, with CEO John Casella calling organic waste...the next big mainstream resource renewal and recycling opportunity."

Source: [1] "Fertile Ground." Waste Age Dec 2012.

Spotlight On: Sustainability

Where do you see opportunity to take advantage of the short- and long-term trends in sustainability?

Water

Water scarcity is a global issue as population growth and climate change limit the availability of fresh water supplies. Governments and industry are increasingly turning to produced water through desalination and recycled sources.[1] "Our residential and industrial needs and practices lead to the depletion of the drinkable water supply," commented Chris Blackburn at GZA GeoEnvironmental. "Our water consumption and the governing regulations are not always concerned with preservation of our water supply or provision of allowances for protection of future drinking water demand. Unfortunately, it is not an endless supply and we need to be increasingly more conscious of the needs of future generations in our policies and practices."

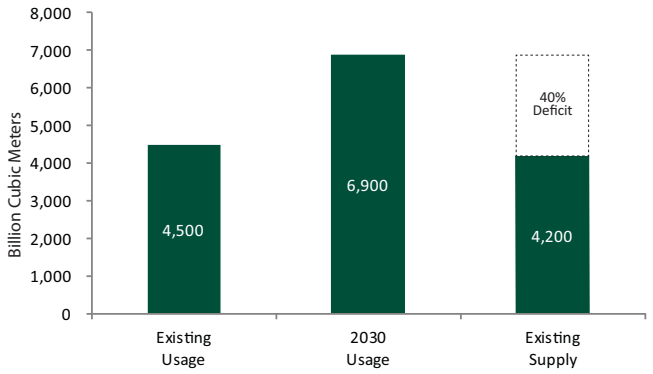
In the United States, the nation's water systems need to invest an estimated $334.8 billion over the next 20 years in order to continue to provide clean and safe drinking water to their customers.[1] Sustainable alternatives for water management are being adopted which include water reuse and recycling, efficient irrigation practices, on-site energy generation from renewable sources, watershed management plans to protect source water, and desalination technology.

"Aquifers are being reduced in urban settings. Cities are struggling with cost and technology required to update and rebuild the water and wastewater treatment infrastructure," Blackburn said. "We are helping develop sustainable models that allow for urban wastewater detention and/or retention before treatment and discharge, recharge, or return to the drinking water supply system. We need to be mindful of practices that contribute to and are components of practical sustainability." Blackburn added, "We should be able to tell future generations that they will have drinking water 100 years from now because our concerns and actions today incorporating sustainable practices and

Resource Constraints

A global resource issue seen as an opportunity for environmental services firms

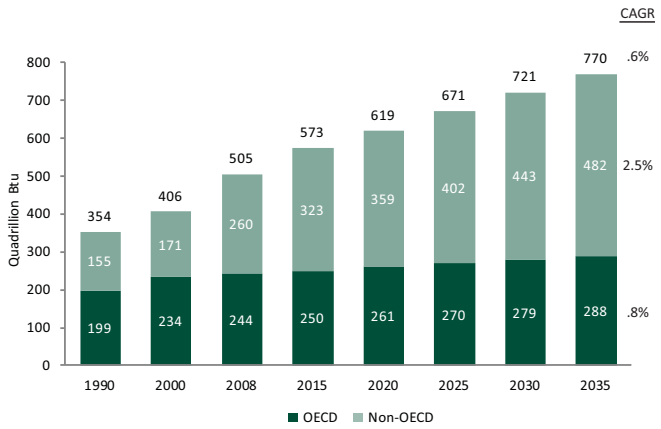
Global Water Demand



- New technologies such as fracking place a greater strain on sustainable water supply
- Wastewater technology and recycling bridge the gap between supply and demand
- Desalination provides an additional source of fresh water

Source: Water Resources Group, McKinsey & Company, Wall Street Journal , US Energy Information Administration.

Global Energy Demand



- Recycling waste reduces supply constraints
  - Food waste: electricity
  - Used oil: industrial lubricants and motor oil
  - Brown greases: biofuel
- National security issue related to future energy demand
  - Opportunity for new sources of energy and energy efficiency

[1] Source: Center for Sustainable Systems, University of Michigan; EPA (2009) Drinking Water Infrastructure Needs Survey and Assessment –Fourth Report to Congress. EPA 816-R-09-001.

implementation of innovative technologies are actually designed to preserve water for tomorrow."

Companies are being mindful of how to redesign their products and processes to use less water or to use recirculated water in the production process. As markets become more global, manufacturing centers are moving into areas that have limited availability of water which requires technologies or processes that use less water.

> By 2025, 1.8 billion people will be living in countries or regions with absolute water scarcity, and two-thirds of the world population could be under stress conditions.
>
> Source: UN Water from FAO.

Green Energy

Investment in alternative energies will continue in order to keep pace with energy demand and regulatory changes. Executives speak to green energy being adopted in a phased approach as we transition from petroleum-based to alternative energy sources, from natural gas and fracking and moving into localized energy sources (anaerobic digesters, solar farms, wind farms) versus the large infrastructure in place today. "The large infrastructure can be supplemented by a localized, smaller scale but more green or alternative energy source," offered Wendy Schlett at GZA GeoEnvironmental, "which could be anything from solar power to small scale hydrogen fuel cells. The localized energy source will aid in garnering a more consistent green power source when provided in conjunction with traditional energy supplies. When there is excess energy from the local green source, this excess energy can be returned and sold to the local power grid."

> Nearly one out of every eight dollars under professional management in the United States today—12.2 percent of the $25.2 trillion in total assets under management tracked by Thomson Reuters—is involved in sustainable and responsible investing.
>
> Source: PwC from Social Investment Forum Foundation.

"The solar industry is growing, in part due to competition in the manufacturing of solar modules. Prices have come down dramatically, and panels are starting to be deployed into commercial and residential applications," observed a private equity investor of a $1.0 billion Greentech Fund. "In certain U.S. markets, it is now cheaper to have solar power than it is to buy power on the grid. In those markets, solar is seeing rapid growth. It is a big theme that we and companies like SolarCity and others are working on."

Environmental Services

Environmental services is attracting investor interest, which broadly-defined includes the value chain of environmental consulting, engineering, and construction; remediation and industrial services; solid waste; hazardous waste; and resource recovery, which encompasses metals recycling and e-waste. Key draws for investors looking at the space include: stable, recurring businesses with proven operating models; seasoned management teams; regulatory support without subsidies; low technology or adoption risk; fragmented, target rich markets in many sub sectors; and history of successful exits. "It is all driven by the business model for us," commented Chris Sorrells at NGP Technology Partners. "You have an entire value chain that is investable at valuations that are reasonable."

Growth

For some investors, the key filter for investing in sustainability is demonstrated growth. "The number one metric that we use as we focus on new sectors is growth—companies that are growing disproportionately to their industry or to the economy as a whole. That has led us in the past to markets like mobile phone recycling and downstream solar or solar financing," offered a private equity investor of a $1.0 billion Greentech Fund.

Other areas of opportunity cited include LED lighting; industrial sensor technology, energy storage, and bioplastics as a substitute for traditional plastics, which has seen innovation and new applications.

Market Update: Oil Collections & Re-Refining

Headwinds Continuing

The used oil market is continuing to experience volatility, with falling base oil and VGO prices putting pressure on processor margins. Insiders expect current conditions will persist over the near-term, 18 to 24 months or longer, with key variables impacting the duration and severity of the current cycle, namely Chevron's 25,000 bbl/day base oil facility in Pascagoula, Mississippi expected to come online in the second half of 2013 and global economic growth and demand from developing markets, notably China and Southeast Asia, and the impact on base oil supply in the United States.

Chevron's plant coming on stream is going to create a surge of supply and may depress margins further, insiders agreed. In the optimistic scenario, Pascagoula comes online and Asia is growing again and needs more lube oil, creating a stronger export market. If that doesn't happen, the expectation is that margins in North America will remain under pressure for awhile. "What history shows is that when substantial new supply comes online, world markets will adjust, and the United States might export more, which is what Chevron says they intend to do," commented Greg Ray, chief operating officer at Heritage-Crystal Clean. "You may see new supply leading to pricing pressure which in turn causes some of the older, marginally economic producers to shut down their facilities and others to scale back lubricant production and instead produce more fuel." Ray referenced the late 1990's when the last major lube plant was added in the United States. In 1997, Excel Paralubes added 22,000 bbl/day in Group II base oil, which depressed lube prices for more than a year as production was rationalized, forcing some operators to shut down or turn to exporting as the market absorbed the supply.

The U.S. base lube oil market, estimated at 2.0 billion gallons, is split roughly between Group I (40 percent), Group II (50 percent), and Group III (10 percent), of which Group I's share is declining. Re-refining currently supplies only a small fraction, less than 10 percent, of these base oils used to produce lubricants. "I think we could see more Group I plant shut downs," Ray added. "The industry expects that Group II base lube oil will continue to gain share, generally at the expense of Group I."

While feedstock quality remains an issue for re-refiners to produce Group III base oil today, it presents an opportunity for the future. Over time, used oil feedstock will change as the world uses more Group III formulations. "If in 10 to 15 years, the used motor oil that we are picking up goes from being 5 or 10 percent Group III content to 50 percent, it will be more economically feasible to build a Group III re-refinery," offered one used oil re-refiner.

Insiders are not concerned about big oil. "I don't expect the majors to enter the re-refining business," Ray offered. "The major refiners are going to be focused on diesel fuel," added Ben Cowart, chief executive officer at Vertex Energy. "Over the next five years, refiners will make their money by working as many diesel molecules as they can get from a crude barrel. The profits will not be in gasoline, nor will they be in lubricants or base oil."

Assessing the market

Collectors

Insiders say that re-refiners six months ago had more attractive economics and could put pressure on the market and take share because they had the economies of scale and could pay more for the feedstock. That advantage is now starting to be taken away from the re-refining model. Now that re-refineries are paying less to collectors, the collectors must find other buyers who will pay more, reduce the prices they pay to used oil generators, or suffer eroded profit margins in their collection business.

> *"It becomes an alignment issue for the smaller collectors to make sure that they have solid markets for their products."*
>
> *—Ben Cowart*
> *Vertex Energy*

"With less pressure at street level because there is not as big a demand for feedstock, the collector is now asking, where am I going to move the product?" Cowart said. "It becomes an alignment issue for the smaller collectors to make sure that they have solid markets for their products, whether that market entails processors or industrial

burners. If the market remains at today's prices, there are going to be collectors who will not have a place to sell their oil; the price would have to come down below the market."

Recyclers/Processors

For advanced processors, it comes down to operating cost and value—where you participate in the value chain, from producing reprocessed fuel oil or VGO to re-refining and blending to finished lubricant. Selling prices are on the decline. Base oil has dropped roughly $1.00 a gallon this year. VGO has also weakened, dropping 40 to 50 cents a gallon. Street prices on feedstock haven't suffered as much, falling roughly 20 cents a gallon. "Prices are going to be under pressure for the next year or two. The question will be who can produce with the lower cost," observed Juan Fritschy, chief executive officer at Universal Environmental Services. "We are in a commodity market. A commodity market is defined in the long run by the operators that can produce at the lowest cost."

The spread premium between Group I and Group II base oil has narrowed in recent months relative to historical norms, driven by moves by the majors, with posted prices per gallon on Group I near $3.60 and Group II $3.75. Group III sells at a premium at $5.00 per gallon and higher and hasn't seen as much erosion, insiders said.

Re-refining spreads are tightening. "With the new Chevron plant coming online, I expect margins to remain tight for the next several quarters," offered Joe Chalhoub, chief executive officer at Heritage-Crystal Clean. "We have seen these cycles. Demand for used oil is such that re-refiners are willing to pay and operate on a smaller margin these days on the basis that they want to maintain their collection volumes." Heritage-Crystal Clean's Greg Ray added, "We don't expect base oil prices to revert to 2011 when margins reached a historical high. But we could add 50 cents back on the spread and still be within a range that most operators in our industry would view as a normal level."

"Where does that leave us as an industry?" questioned Ben Cowart at Vertex Energy, a VGO producer. "We've got to figure out what are our other markets and alternatives and dig a little bit deeper into diversification in our space," added Cowart. "Vertex is in an acquisition mode. We want to do deals that are synergistic with our business model. Diversification is critical. We do not want to be a used oil company. We want to be a liquid waste recycling business." Buyers are being disciplined in their approach to acquisitions. "Unless a company has a comparable margin profile or brings tangible synergies, we would not look at adding services just for the sake of diversification," commented Fritschy. "We are best served by being the best used oil collector in the market."

For processors, current market dynamics might make finding collection assets easier. "There is no pressure or demand on the collector space at the moment," observed Cowart. "When the market is short and used oil is in high demand, collectors get a premium for their business. When the market is balanced or long, as it is now, then the collector is valued on its ability to generate earnings from the business. It is not as much about the residual value of the used oil that they may or may not be fully monetizing." Seller value expectations and purchase multiples will likely come down if the market stays on the course it is on. "The collectors know that re-refiners are looking at their volume and their market presence and footprint. They want to value those attributes of the business high," Fritschy added. "However, 2012 has not been a good year for many collectors. Market dynamics have put pressure on the profitability and cash flow of these businesses, which has made some collectors more reasonable in their valuation expectations. We are seeing an increased number of collectors looking to partner or sell in the current environment."

> *"We are seeing an increased number of collectors looking to partner or sell in the current environment."*
>
> *—Juan Fritschy*
> *Universal Environmental Services*

Re-refiners need to do certain things to protect their current investment, according to Cowart. "The first thing I would do would be to explore packaging my own product. I would want to be the lowest cost processor. I would want to own my collection so I could drive street cost as low as I could to preserve margin." Cowart added that re-refiners can potentially change the market to accommodate their investment. "One of the things that we are hearing from NORA[1] is that one or two re-refiners want NORA to state that re-refining is the preferred method for recycling used oil, as the EPA has done.[1] The challenge with this is maintaining a level playing field for all industry stakeholders."

[1] NORA, An Association of Responsible Recyclers

Market Update: Oil Collections & Re-Refining

Blenders

Vertically integrated re-refiners with proprietary blending are enjoying a better margin profile, with insiders calling it a buyer's market for blenders because of the oversupplied base oil market. "If you don't have access to blending and packaging and a captive controlled outlet for your product, what a tough business you are going to have for the foreseeable future," commented John Wesley, chief executive officer at Universal Lubricants. "I am going to be able to recover the cost to produce my base oil plus a margin if I convert it to a finished product. I am not going to be able to recover the cost of making that gallon if I have to sell into commercial markets in today's environment," added Wesley.

Universal Lubricants is growing its finished lubricants business. Volumes are up substantially year over year, indicated Wesley. The company anticipates having a robust 2013, coming from growth in its ECO Ultra brand and across its portfolio of diesel brands. "Our drive is to consume 100 percent of what we produce out of our refinery," said Wesley. "I don't want to be exposed to the whims of an oversupplied base oil market. I want to convert my base oil into a finished product and sell it through my own distribution."

The company brought on Jan Horsfall as chief marketing officer in December 2012. Horsfall's previous background includes time at Valvoline in consumer brand strategy and experience in consumer brand organizations in the Internet, energy, telecom, and retail industries. "We want to be a branded consumer product company, whether that is a business consumer, like a quick lube or quick repair facility, or a retail consumer. We want to create a brand and have a brand preference created," Wesley said. "Jan has proven time and time again that he can do that."

"We are focused on dominating our markets from a collection perspective, driving our collection costs down to fair market value, taking that used oil and pushing it through a state of the art re-refinery, optimizing our yields, and then blending gasoline oils and diesel engine oils out of that material and selling them into the markets," Wesley said. "My only concern is margin compression on product that I have to sell into commercial markets. I am pretty bullish on everything else."

Caution on Expansion

Wait and see is the mindset for some operators as they navigate this cycle. In the United States, used oil recycling projects announced or in process will add more than 100 million gallons of processing capacity by 2013 assuming all come online, which include the Avista Oil/Universal Environmental Services re-refinery scheduled to begin operation in Q2 '13. Insiders speculate that some of the projects on the drawing board will not get built. "A number of the players announced new projects or expansions when re-refining margins were higher," commented Joe Chalhoub at Heritage-Crystal Clean. "I would suspect that for some of those projects, the investors and management groups didn't forecast the volatility in this cycle, which may force them to re-evaluate their return assumptions."

"We view this as an opportunity. We came to market with a very efficient plant and a productive organization. While the oil business margin is not where we expected it to be when the plant began operations, we are in for the long-term," Chalhoub added. "We will continue to evaluate expansion alternatives with an understanding of the market dynamics."

> *"We view this as an opportunity. We came to market with a very efficient plant and a productive organization. We are in for the long-term."*
>
> *—Joe Chalhoub*
> *Heritage-Crystal Clean*

"Avista's expansion plans have not changed," said Juan Fritschy at UES. "Assuming we start construction on a second re-refinery in 2013, we will be on the upswing of the cycle at the time the facility is operational in 2015," Fritschy said, adding, "We will not proceed with the construction of a second re-refinery until we can guarantee supply."Avista is in advanced discussions with several potential partners. "We are looking at this business from the lens of long-term investor and not timing our investment decisions based on temporary market imbalances."

[1] Federal publication EPA530-F-96-004.

Used Oil is a Valuable Waste Stream

Insiders taking a long-term view are bullish on the market. The industry goes through cycles, and you have to have patient capital. "You don't build a $50 million facility and throw your hands up because you are going to have a rough road for the next 18 to 36 months," remarked John Wesley at Universal Lubricants. "You build it to be in business 25 years from now. It is a very choppy market, and there will be winners and losers." "Temporary market conditions can always test your economic assumptions at a given point in time," added Joe Chalhoub at Heritage-Crystal Clean. "We had a lot of discussion before we built the re-refinery about how we would weather commodity price cycles. If you are building a plant with a 20-year life, you are basing that decision on an expectation of what the economics will average out over 20 years. We like being a Group II producer at this point." "We are going to go through cycles that we don't control but that will affect the business," added Heritage-Crystal Clean's Greg Ray. "Investors in our company like the fact that our team includes managers with a long-term perspective and with experience to manage through cycles." Ray added, "Having operated in the industry for a number of years, we have gone through times when margins were weak, and they have always restored themselves to a level where it was possible to make an attractive return on capital on a medium- to long-term basis."

Insiders remain optimistic that re-refined oil can gain more traction and become a larger supplier to the lubricants market. There is room for growth and enough of a market to continue to take share, with re-refiners today capturing less than ten percent of an addressable 2.0 billion gallon base lube oil market in the United States. Re-refining also has the added support of a lower cost and better environmental profile than producing lubricating oils from virgin crude. "In the future, if the U.S. re-refining industry grows to achieve the maximum recycling of used oil, the production of re-refined base oil could more than double, and this output could satisfy roughly one quarter of our domestic requirements," observed Ray. "There is enough demand from independent blenders and compounders to support continued growth in the re-refining space if you believe, as we do, that re-refining is ultimately a lower cost way to produce lube oil."

The sustainability push is creating momentum for used oil in waste recovery. Wal-Mart is looking at re-refining in their fleet as a means to reduce their overall carbon footprint. The state of California has undertaken a life-cycle assessment (LCA) to analyze the environmental impacts of used oil. "I have to believe that the LCA is going to highlight the energy savings that can be realized from a repurposed feedstock manufactured engine oil versus a crude-based," commented John Wesley at Universal Lubricants.

Advanced processing of used oil, whether it is repurposing for fuel or re-refining to base oil, is still a form of recycling. Insiders agree that economics has to play into what the best answer is for used oil.

California Life Cycle Assessment

The state of California has undertaken a life-cycle assessment (LCA) to analyze the environmental impacts of used oil. With a budget of $6 million, the study could be "...the most comprehensive and costly...ever done," according to industry consultant Jack Waggener, which is expected to be completed by January 1, 2014.

The LCA will examine environmental effects, from carbon footprint to pollutants and byproducts generated, for used oil disposal options ranging from non-collection up to re-refining and will require an economic assessment of the various disposal and reuse options.

The outcome of the assessment is likely to affect how other states handle and dispose of the waste product. California and Massachusetts currently are the only states that have classified used oil as a hazardous waste.

Source: "California Ponders Used Oil's Impact." Lube Report Nov 2012.

Market Update: Oil Collections & Re-Refining

Recent Transaction

Completed: December 2012

Acquired

Transaction Highlights

Consideration: $1.25 billion
Revenue Multiple: .93x
EBITDA Multiple: 7.8x

Combination of Two Market Leaders in Environmental Services

- Transaction marks largest acquisition in CLH history
- Formalizes long-term relationship between companies

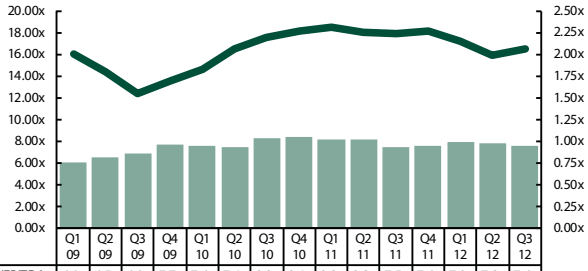
Rationale and Synergies

- Acquiring number one player in small quantity (SQ) waste generators, parts-cleaning, and used oil collection and re-refining
- Broadening waste management capabilities into re-refining waste oil and expanded solvent recycling
- Maximize cross-selling opportunities by leveraging combined sales forces
  - SQ generator customer base tops 200,000
  - Drive increase in waste volumes through CLH's existing disposal network
- CLH targeting $20 million in annual cost-based synergies
- Post-acquisition, CLH revenue will surpass $3.5 billion, more than a 60 percent increase

Industry Valuations

Relative Valuation Trends

Solid Waste - Vertically Integrated



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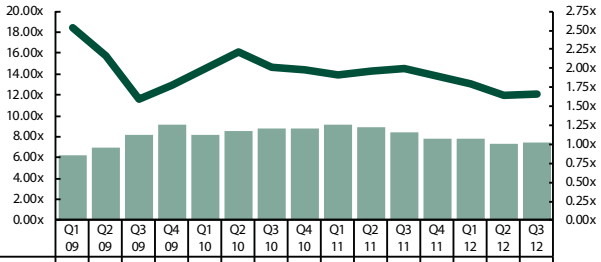
EV/EBITDA	6.0x	6.5x	6.9x	7.7x	7.6x	7.4x	8.3x	8.4x	8.2x	8.2x	7.5x	7.6x	7.9x	7.8x	7.6x
EV/Revenue	2.0x	1.8x	1.5x	1.7x	1.8x	2.1x	2.2x	2.3x	2.3x	2.3x	2.2x	2.3x	2.2x	2.0x	2.1x

Solid Waste - Waste-to-Energy



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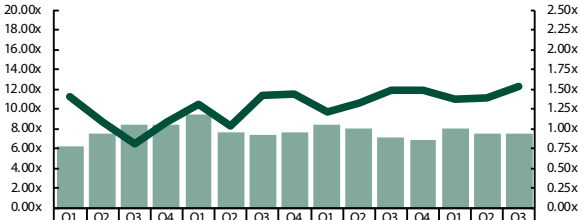
EV/EBITDA	6.2x	7.0x	8.2x	9.1x	8.2x	8.6x	8.7x	8.8x	9.1x	8.9x	8.4x	7.8x	7.9x	7.3x	7.5x
EV/Revenue	2.5x	2.2x	1.6x	1.8x	2.0x	2.2x	2.0x	2.0x	1.9x	2.0x	2.0x	1.9x	1.8x	1.6x	1.7x

Special Waste - Broadly Diversified



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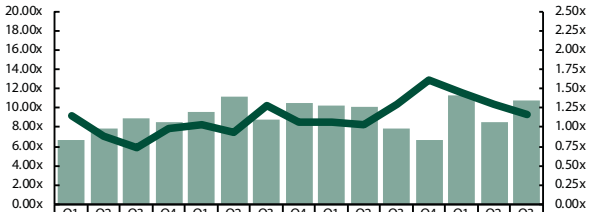
EV/EBITDA	6.2x	7.5x	8.4x	8.4x	9.4x	7.7x	7.4x	7.7x	8.4x	8.0x	7.1x	6.9x	8.0x	7.6x	7.5x
EV/Revenue	1.4x	1.1x	0.8x	1.1x	1.3x	1.0x	1.4x	1.4x	1.2x	1.3x	1.5x	1.5x	1.4x	1.4x	1.5x

Special Waste - Other



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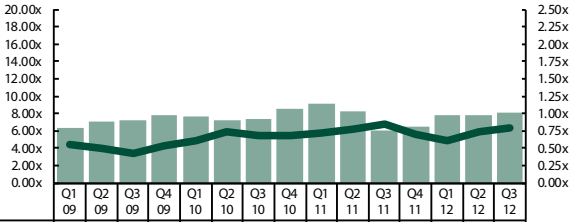
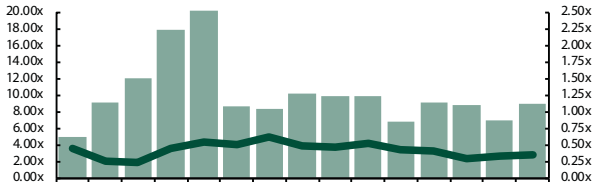
EV/EBITDA	6.7x	7.8x	8.9x	8.6x	9.6x	11.2x	8.8x	10.5x	10.2x	10.1x	7.9x	6.6x	11.3x	8.5x	10.8x
EV/Revenue	1.1x	0.9x	0.7x	1.0x	1.0x	0.9x	1.3x	1.1x	1.1x	1.0x	1.3x	1.6x	1.5x	1.3x	1.2x

Environmental Consulting, Engineering & Construction



	Q1 09	Q2 09	Q3 09	Q4 09	Q1 10	Q2 10	Q3 10	Q4 10	Q1 11	Q2 11	Q3 11	Q4 11	Q1 12	Q2 12	Q3 12
EV/EBITDA	6.4x	7.0x	7.3x	7.8x	7.7x	7.2x	7.4x	8.6x	9.1x	8.3x	6.0x	6.5x	7.9x	7.8x	8.1x
EV/Revenue	0.6x	0.5x	0.4x	0.5x	0.6x	0.7x	0.7x	0.7x	0.7x	0.8x	0.8x	0.7x	0.6x	0.7x	0.8x

Metals Recycling & E-Waste



	Q1 09	Q2 09	Q3 09	Q4 09	Q1 10	Q2 10	Q3 10	Q4 10	Q1 11	Q2 11	Q3 11	Q4 11	Q1 12	Q2 12	Q3 12
EV/EBITDA	4.9x	9.0x	12.1x	17.9x	21.1x	8.6x	8.4x	10.1x	9.8x	10.0x	6.9x	9.1x	8.8x	7.0x	8.9x
EV/Revenue	0.5x	0.3x	0.2x	0.4x	0.5x	0.5x	0.6x	0.5x	0.5x	0.5x	0.4x	0.4x	0.3x	0.3x	0.3x

BGL Environmental Services indices defined on Page 25.
SOURCE: S&P Capital IQ.

Industry Valuations

Relative Valuation Trends

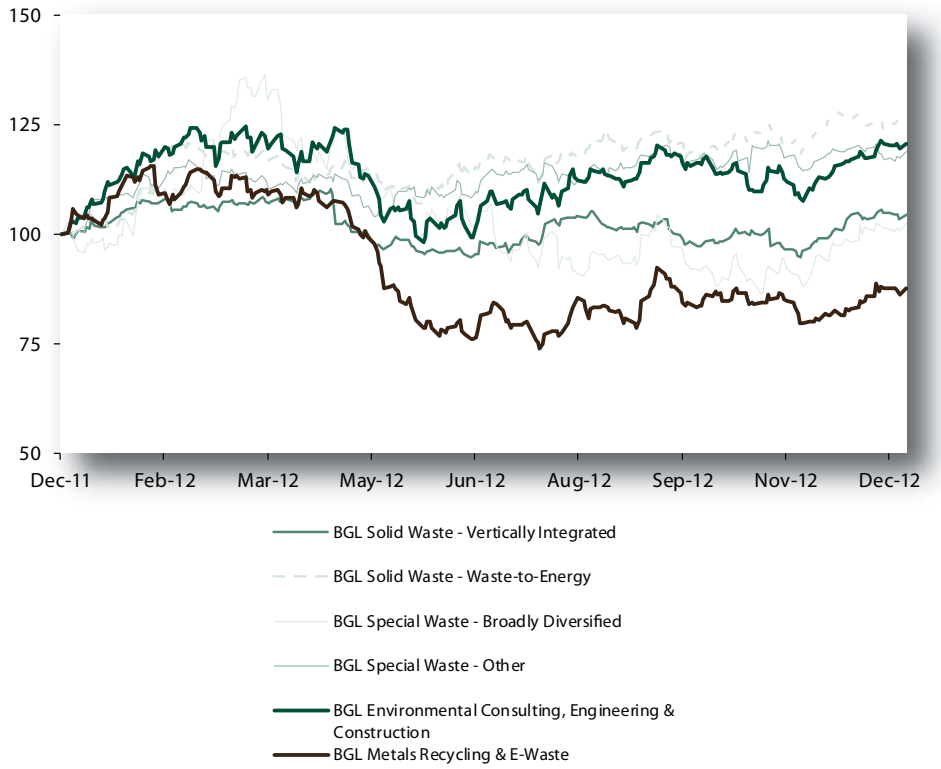
($ in millions, except per share data)			Current	% of	Market	Enterprise	TTM Enterprise Value /		Total Debt/	TTM	TTM Margins	
Company Name	**Country**	**Ticker**	**Stock Price (1)**	**52W High**	**Capitalization (2)**	**Value (3)**	**Revenue**	**EBITDA**	**EBITDA**	**Revenue**	**Gross**	**EBITDA**
SOLID WASTE (VERTICALLY-INTEGRATED)												
Waste Management, Inc.	United States	NYSE:WM	$33.74	92.8%	$15,652.0	$25,612.0	1.9x	7.8x	3.0x	$13,621.0	35.4%	24.4%
Republic Services, Inc.	United States	NYSE:RSG	29.33	93.6%	10,696.7	17,729.5	2.2x	7.5x	3.0x	8,115.1	39.3%	29.1%
Waste Connections Inc.	United States	NYSE:WCN	33.79	99.6%	4,148.9	5,052.3	3.2x	10.0x	2.0x	1,592.6	42.3%	31.6%
Progressive Waste Solutions Ltd.	Canada	TSX:BIN	21.55	92.7%	2,477.2	3,918.7	2.1x	7.5x	2.8x	1,858.1	39.6%	28.4%
Casella Waste Systems Inc.	United States	NasdaqGS:CWST	4.38	61.3%	173.3	662.2	1.4x	9.4x	***6.2x***	465.3	29.3%	16.8%
Median			**$29.33**	**92.8%**	**$4,148.9**	**$5,052.3**	**2.1x**	**7.8x**	**2.9x**	**$1,858.1**	**39.3%**	**28.4%**
Mean			**$24.56**	**88.0%**	**$6,629.6**	**$10,594.9**	**2.2x**	**8.5x**	**2.7x**	**$5,130.4**	**37.2%**	**26.1%**
SOLID WASTE (WASTE-TO-ENERGY)												
Covanta Holding Corporation	United States	NYSE:CVA	$18.42	96.8%	$2,431.4	$4,414.4	2.7x	10.0x	5.2x	$1,644.0	42.0%	26.2%
Shanks Group plc	United Kingdom	LSE:SKS	1.42	76.3%	563.4	1,005.9	0.9x	7.0x	3.8x	1,115.7	15.6%	12.8%
Median			**$9.92**	**86.5%**	**$1,497.4**	**$2,710.2**	**1.8x**	**8.5x**	**4.5x**	**$1,379.8**	**28.8%**	**19.5%**
Mean			**$9.92**	**86.5%**	**$1,497.4**	**$2,710.2**	**1.8x**	**8.5x**	**4.5x**	**$1,379.8**	**28.8%**	**19.5%**
SPECIAL WASTE (BROADLY DIVERSIFIED)												
Veolia Environnement S.A.	France	ENXTPA:VIE	$12.07	69.9%	$6,130.1	$29,327.9	0.7x	7.8x	**7.0x**	38,187.4	16.7%	9.4%
Clean Harbors, Inc.	United States	NYSE:CLH	55.01	76.8%	3,266.8	3,541.5	1.6x	9.3x	2.1x	2,174.8	30.4%	17.4%
Newalta Corporation	Canada	TSX:NAL	15.55	96.5%	843.8	1,236.8	1.7x	9.0x	2.9x	722.7	24.4%	19.3%
Median			**$15.55**	**76.8%**	**$3,266.8**	**$3,541.5**	**1.6x**	**9.0x**	**2.5x**	**$2,174.8**	**24.4%**	**17.4%**
Mean			**$27.54**	**81.1%**	**$3,413.6**	**$11,368.7**	**1.4x**	**8.7x**	**2.5x**	**$13,695.0**	**23.8%**	**15.4%**
SPECIAL WASTE (OTHER)												
Stericycle, Inc.	United States	NasdaqGS:SRCL	$93.28	97.2%	$8,011.8	$9,307.5	5.0x	16.8x	2.3x	$1,856.1	47.2%	29.8%
Secure Energy Services Inc.	Canada	TSX:SES	9.95	90.8%	1,040.4	1,127.8	1.1x	12.1x	1.0x	996.8	9.9%	9.4%
US Ecology, Inc.	United States	NasdaqGS:ECOL	23.54	94.0%	431.3	475.3	3.0x	8.3x	0.9x	160.3	39.9%	35.9%
EnergySolutions, Inc	United States	NYSE:ES	3.12	57.5%	281.6	864.3	0.5x	***25.3x***	***31.8x***	1,796.0	4.1%	1.4%
Heritage-Crystal Clean, Inc	United States	NasdaqGM:HCCI	15.01	66.3%	271.2	246.1	1.1x	***21.2x***	1.8x	229.8	15.8%	5.0%
Renewable Energy Group, Inc.	United States	NasdaqGM:REGI	5.86	55.0%	178.9	248.8	0.2x	4.9x	1.5x	1,049.9	8.1%	4.8%
Vertex Energy, Inc.	United States	OTCPK:VTNR	3.16	87.8%	52.9	66.4	0.5x	***18.7x***	4.1x	133.7	6.1%	2.7%
Perma-Fix Environmental Services Inc.	United States	NasdaqCM:PESI	0.68	35.8%	38.3	53.8	0.4x	***30.2x***	***9.2x***	134.5	14.0%	1.3%
Median			**$7.91**	**77.0%**	**$276.4**	**$362.1**	**0.8x**	**10.2x**	**1.7x**	**$613.3**	**12.0%**	**4.9%**
Mean			**$19.33**	**73.0%**	**$1,288.3**	**$1,548.8**	**1.5x**	**10.5x**	**2.0x**	**$794.6**	**18.1%**	**11.3%**
ENVIRONMENTAL CONSULTING, ENGINEERING & CONSTRUCTION												
AMEC plc	United Kingdom	LSE:AMEC	$16.30	84.5%	$4,902.2	$4,432.5	0.7x	8.0x	0.6x	$5,965.0	13.7%	8.5%
Chicago Bridge & Iron Company N.V.	Netherlands	NYSE:CBI	46.35	97.1%	4,486.4	3,895.0	0.7x	7.6x	0.1x	5,203.0	12.7%	9.5%
URS Corporation	United States	NYSE:URS	39.26	83.2%	3,017.0	5,014.0	0.5x	5.7x	2.8x	10,393.0	8.1%	7.4%
AECOM Technology Corporation	United States	NYSE:ACM	23.80	97.2%	2,572.3	3,103.3	0.4x	6.4x	2.4x	8,218.2	5.1%	5.3%
Arcadis NV	Netherlands	ENXTAM:ARCAD	23.59	97.9%	1,746.3	2,231.9	0.7x	9.4x	3.2x	3,151.9	31.1%	7.4%
Tetra Tech Inc.	United States	NasdaqGS:TTEK	26.47	94.5%	1,690.0	1,669.1	0.8x	8.0x	0.4x	2,022.1	17.8%	10.3%
Cardno Limited	Australia	ASX:CDD	7.23	80.4%	1,020.7	1,115.4	1.1x	8.3x	1.5x	988.6	17.4%	13.3%
Great Lakes Dredge & Dock Corporation	United States	NasdaqGS:GLDD	8.93	96.7%	529.4	745.9	1.2x	***11.4x***	3.9x	646.8	11.7%	10.1%
TRC Companies Inc.	United States	NYSE:TRR	5.82	68.1%	167.9	161.7	0.5x	7.1x	0.4x	303.5	17.6%	7.4%
Median			**$23.59**	**94.5%**	**$1,746.3**	**$2,231.9**	**0.7x**	**7.8x**	**1.5x**	**$3,151.9**	**13.7%**	**8.5%**
Mean			**$21.97**	**88.9%**	**$2,236.9**	**$2,485.4**	**0.7x**	**7.6x**	**1.7x**	**$4,099.1**	**15.0%**	**8.8%**
METALS RECYCLING & E-WASTE												
Sims Metal Management Limited	United States	ASX:SGM	$9.96	60.8%	$2,034.6	$2,330.2	0.2x	***18.1x***	1.8x	$9,255.6	8.0%	2.1%
Commercial Metals Company	United States	NYSE:CMC	14.86	90.2%	1,730.4	2,749.9	0.4x	7.4x	3.5x	$7,828.4	9.2%	4.7%
INTERSEROH SE	Germany	DB:ABA	85.52	98.0%	841.5	891.7	0.3x	***21.6x***	2.1x	$2,709.5	8.9%	1.5%
Schnitzer Steel Industries, Inc.	United States	NasdaqGS:SCHN	30.33	61.5%	777.5	1,050.3	0.3x	7.5x	2.4x	$3,340.9	7.8%	4.1%
Metalico Inc.	United States	AMEX:MEA	1.96	37.5%	93.2	220.9	0.4x	10.4x	***6.3x***	$576.8	8.5%	3.7%
Industrial Services of America, Inc.	United States	NasdaqCM:IDSA	2.40	34.5%	16.7	38.6	0.2x	NM	NM	$206.9	3.5%	-0.1%
Median			**$12.41**	**61.1%**	**$809.5**	**$971.0**	**0.3x**	**7.5x**	**2.3x**	**$3,025.2**	**8.3%**	**2.9%**
Mean			**$24.17**	**63.8%**	**$915.7**	**$1,213.6**	**0.3x**	**8.4x**	**2.5x**	**$3,986.4**	**7.7%**	**2.7%**

NOTE: Figures in bold and italic type were excluded from median and mean calculation.
(1) As of 12/31/2012.
(2) Market Capitalization is the aggregate value of a firm's outstanding common stock.
(3) Enterprise Value is the total value of a firm (including all debt and equity).
Source: S&P Capital IQ.

Industry Valuations

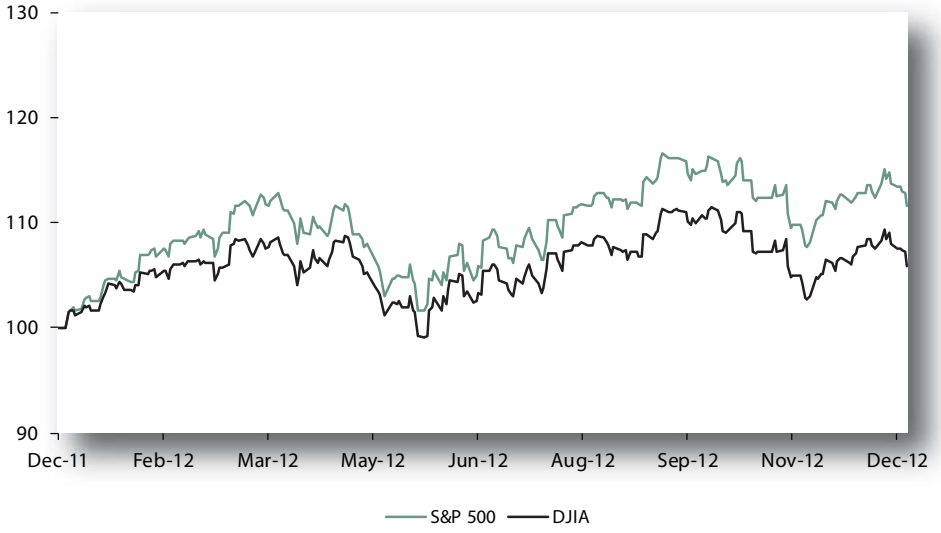
Sector Performance

By Sector



	1 Year
Solid Waste - Vertically Integrated	4.4%
Solid Waste - Waste-to-Energy	27.2%
Special Waste - Broadly Diversified	2.5%
Special Waste - Other	18.9%
Environmental Consulting, Engineering & Construction	20.6%
Metals Recycling & E-Waste	-12.5%

Overall Market



	1 Year
S&P 500	13.4%
DJIA	7.3%

Index: December 30, 2011= 100.

Source: S&P Capital IQ.

Global Environmental Services Practice

- Solid Waste (Non-Hazardous)
- Special Waste (Hazardous as well as other non-traditional waste streams)
- Environmental Consulting, Engineering & Construction (EE&C)
- Metals Recycling & E-Waste
- Reclamation & Remediation
- Waste-to-Energy (WtE) and Cleantech

Who We Are

Leading Independent Firm

- Independent investment banking advisory firm focused on the middle market
- Senior bankers with significant experience and tenure; partners average over 20 years of experience
- Offices in Chicago, Cleveland, Salt Lake City, and Seattle
- Founding member and exclusive U.S. partner of Global M&A, the world's leading partnership of investment banking firms focusing on middle market transactions
- Deep industry experience across core sectors of focus, including: Business and Environmental Services, Consumer Products, Healthcare and Life Sciences, Industrials, and Real Estate

Comprehensive Capabilities

M&A Advisory	Private Placements	Financial Advisory
Sell-Side Advisory	All Tranches of Debt & Equity Capital for:	General Financial & Strategic Advice
General Financial & Strategic Advice	Growth	Balance Sheet Restructurings
Acquisitions & Divestitures	Acquisitions	Sales of Non-Core Assets or Businesses
Public & Private Mergers	Recapitalizations	§363 Auctions
Special Committee Advice	Dividends	
Strategic Partnerships & Joint Venture Formation		
Fairness Opinions & Fair Value Opinions		

Representative Transactions:

Remtec International — acquired by — A-GAS — a portfolio company of — LDC — Brown Gibbons Lang & Company	ECS REFINING — recapitalized by — ZS Fund L.P. — Brown Gibbons Lang & Company	**Pending Sale** Provider of Emergency Response and Waste Remediation Services — Brown Gibbons Lang & Company	**Pending Capital Raise** Liquid Waste Collection and Recycling Business — Brown Gibbons Lang & Company	**Pending Capital Raise** Series of Waste-to-Energy Facilities throughout the United States — Brown Gibbons Lang & Company

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