W. MARC BERNSAU | BUSINESS JOURNAL

IST President and CEO Stuart Haber says the company's portable waste-to-energy system – shown in the background – stands to turn the waste industry "on its head."

Waste-to-energy heats up at several local companies

By Kyle Alspach
kalspach@bizjournals.com

When **IST Energy Corp.** makes its first product delivery to a California military base this month, it could mark the start of a new chapter in the way we deal with — and view — waste.

The Waltham company believes it will be the first to market with a compact, on-site system for converting waste into energy. Though many systems for making heat and power from waste are in use, they're usually large facilities that require waste to be hauled in.

IST's 48-foot-long "GEM" system can go to where the waste is: small towns, colleges, hospitals, factories. The $1.1 million system processes up to three tons a day of mixed waste, putting out 75 kilowatts of net electricity and 180 kilowatts of heat.

"I think it really sort of turns the waste industry on its head," said Stuart Haber, president and CEO of IST Energy. "It turns waste into an asset, instead of a burden."

IST is not alone in seeking a better approach for meeting waste disposal and energy needs at the same time.

Other Massachusetts companies pursuing new waste-to-energy technologies include Waltham-based **Harvest Power Inc.**, which in March raised a $51.7 million equity round to expand its production of energy from organic waste, and Boston-based **Ze-gen Inc.**, which is pursuing its first commercial-scale waste-gasification plant in Attleboro.

All of the technologies aim to lower the need for landfills and for current waste-to-energy systems, which are often less efficient and more polluting by comparison.

The global market for waste-to-energy systems is expected to reach $13.6 billion by 2016, up from $3.7 billion last year, thanks to the alignment of technological developments, economic conditions and public policy, according to **Pike Research**.

IST's GEM system — which uses technology known as downdraft gasification — has been under development for seven years, Haber said. The company is a spinout from Haber's research and development firm, **Infoscitex Corp.** of Waltham, which provided the initial R&D for the GEM.

The system is a response to a request from the **U.S. Army**, which has been seeking a solution to dealing with waste in Iraq and Afghanistan that doesn't require trucking or burning — both of which can alert enemies to troop locations.

The GEM cost $10 million to develop, with $3.7 million coming from the **Department of Defense** and the rest from IST employees, Infoscitex and an angel investor, Haber said.

The DOD has ordered the first GEM for Edwards Air Force Base in California, and Haber estimates that IST will sell five systems this year — with exponential growth in following years. The 15-person company has been demonstrating the technology since January for visitors who have included officials from the **Massachusetts Institute of Technology**, **Gillette Stadium** and **Honda**, Haber said.

$13.6B

The global market for waste-to-energy systems is expected to reach $13.6B by 2016, up from $3.7B last year, thanks to the alignment of technological developments, economic conditions and public policy, according to Pike Research.

Meanwhile, Harvest Power is expecting to complete its first two facilities by the end of this year, in Canada. The anaerobic digestion facilities convert organic material such as food and yard waste into biogas, or syngas, which can then be turned into natural gas, heat or electricity.

The company's recent Series B funding included participation from **Generation Investment Management**, a firm co-founded by former Vice President Al Gore. It brings the company's total equity financing to $72 million, said Paul Sellew, co-founder and CEO of Harvest Power.

The funds will help to build the first two plants — near Vancouver and near Toronto — and also to develop the company's first projects in the United States, where Harvest Power is focused on the Northeast and West Coast, Sellew said.

"We are particularly focused on opportunities in Massachusetts," said Sellew, who said he expects the company's first U.S. projects will be announced this year.