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Investment climate warms for 'cleantech'

by George White

VENTURE CAPITAL. Venture capital and private equity firms have been piling into clean energy companies this year, lured by the potential of getting in on the ground floor of a swiftly expanding market.

Clean energy companies have raised more than \$360 million this summer alone, according to the statistics from VCDeal.com. The latest deal—a \$100 million financing for biodiesel company Renewable Energy Group Inc.—was announced Wednesday.

"Cleantech investing has been going on under different names for the last five to seven years, now it happens to be a more mainstream thing because of the perceived energy problems and climate change issues that are out there," said Tom Burton, member and chairman of the energy and cleantech practice group at Mintz, Levin, Cohn, Ferris, Glovsky

Dell's woes create opportunity for alternative power sources

by Carolyn Murphy

VENTURE CAPITAL Dell Inc.'s recall of potentially explosive lithium-ion batteries could be good news for developers of next-generation portable power supplies—and their venture backers.

"People in the battery industry have been aware of the problems lithium has had for a while," said Neil Suslak, managing director of New York-based **Braemar Energy Ventures**. "So venture capitalists have been looking for other solutions to combat those issues."

While many startups are still in funding stages, their alternatives to the traditional lithium-ion battery may command greater notice in light of the recall—potentially



the largest battery recall in the electronic industry's history.

The problem in the traditional lithium-ion battery stems from BATTERY continued on page 10

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the volatility of lithium, which in its liquid state is flammable.

The market lithium-ion batteries serve is about \$2 billion, said Thomas Urban, an investment manager for **Intel Corp.**'s venture arm, Intel Capital. It's one in which inno-

vation has been relatively slow, he said, but there is room for growth.

"If you can really do something that's substantially better in any of the vectors," Urban said, such as making batteries safer or substantially more energy dense, "you can certainly see the demand's going to be there."

One Intel portfolio company that makes silver-zinc batteries, **Zinc Matrix Power Inc.**, took a \$7 million investment from both Intel Capital and the U.S. Army's Maitland, Fla.-based venture fund, **OnPoint Technologies**, in April. The funding brought Zinc Matrix's total to \$32 million and came as the company unveiled plans to establish a pilot production facility in Camarillo, Calif., where it is based. Two months later,

Zinc Matrix announced the selection of **Tyco Electronics Corp.** as a manufacturing partner as it readied to ramp up production.

Urban said Intel's investment philosophy is to work with startups to the extent that they're developing new technology, then try to have them license or create manufacturing relationships with such companies as **Matsushita Electric Industrial Co. Ltd.**, known in the West as Panasonic, or **Sony Corp.** This creates a level of comfort with Intel customers, computer original equipment manufacturers, or OEMs.

Another alternative to lithium ion is solid-state materials, something both Intel and Braemar are looking into.

"If you can crate a battery that has the valuable energy density that lithium has ... and avoid the thermal runway issues, then you can form-fit it into different applications," Braemar's Suslak said.

He points to one Braemar portfolio company, Lakeland, Fla.-based **Solicore Inc.**, which makes a lithium polymer battery that relies on solid-state lithium and does not have the flammability issues liquid lithium carries.

The company has products to market for smart-card, radio frequency identification, or RFIC, and medical customers. Braemar participated in two \$15 million rounds for the company, the latest of which was a Series C led by Palo Alto, Calif.-based **Rho Ventures** in July 2005. Solicore will likely go back for another round of funding, Suslak said.

Other startups focusing on next-generation power supply-and also commanding the attention of the U.S. Army's

> VC arm and corporate venture groups could eventually be poised for a transition, perhaps by acquisition or through a public offering.

> Watertown, Mass.-based A123 Systems Inc., which develops next-generation lithium-ion batteries, took \$30 million in February through a third round of financing that was expected to be its last. Among A123's many backers are Schaumburg, Ill-based Motorola Inc.'s investment arm, Motorola Ventures, Qualcomm Inc. of San Diego, GE Commercial Finance and OnPoint.

Tekion Inc., a Canadian startup that develops micro fuel cells for mobile devices, also took an undisclosed round of funding from Motorola Ventures in No-

vember 2005.

San Diego's PowerGenix Corp. specializes in nickel-zinc technologies and took \$10 million in November 2004 from new investors Braemar and OnPoint, as well as from its three existing investors, Advent International Corp. of Boston, Granite Ventures LLC of San Francisco and Technology Partners of Palo Alto.

PowerGenix makes a nickel-zinc battery that provides high-power density for power tools. It's nontoxic and doesn't have the volatility problems that lithium carries. The company is in the final stages of raising another round as customer orders stream in.

Looking ahead, there may be room for more startups trying to solve the lithium problem.

Because the safety issues that recently came to light will either add costs or derate the batteries, Slusak said, people are going to look more closely at alternative battery technologies.

"The right startup could take advantage of that," he said, adding that because it's a tough and expensive business, "it's got to be compellingly interesting opportunity to make it on the venture side."

