

Serial high-tech entrepreneurs and investors are directing more attention these days to clean technologies as government subsidies, venture capital and stimulus funds are funneled toward renewable energy and other cleantech ventures.

At the same time, the number of cleantech companies in the Sacramento region has grown in recent years. In late 2005, there was a cluster of 29 cleantech firms in the nine-county region, Sacramento Area Regional Technology Alliance chief executive officer J.D. Stack said. SARTA's three-year-old CleanStart program for environmental and renewable-energy companies began keeping a count then and says that number is now up to about 100.

In an effort to highlight some of the region's cleantech standouts, the Business Journal conducted an informal survey of a dozen venture capitalists, investors, business owners and other industry watchers to determine which of the area's cleantech firms stand to have the biggest positive impact on the local economy and beyond.

Despite the recession, some of the cleantech industry observers' top picks are having some big successes. West Sacramento's Bloo Solar Inc., formerly known as Q1 Nanosystems, closed a \$3.5 million Series A round of venture funding last month.

Also last month, Hewlett-Packard Co. (NYSE: HPQ) announced it will sell wireless sensor network technology developed by Folsom's SynapSense Corp.

Of the 20 companies that were named as promising up-and-comers, six topped the list: Solar Power Inc., SynapSense, Bloo Solar, Jadoo Power Systems Inc., Paramount Equity Mortgage and WINDensity.

#### SOLAR POWER INC.

Solar Power manufactures, distributes and installs photovoltaic solar systems, a fully integrated business model in an industry that historically has been fragmented with companies focusing on development, financing, installation or manufacturing.

The two-year-old company is selling products in about 10 states, and in Europe, Asia, Australia and South Korea.



Steve Kircher

The company also sells in the Sacramento region.

The integrated model, still relatively rare in the industry, "absolutely" is helping Solar Power drive down costs and be competitive, chief executive officer Steve Kircher said.

Roseville-based Solar Power (OTCBB: SOPW) is building a 3.5-megawatt solar power system — covering about 20 acres — at aerospace company Aerojet's operation in Rancho Cordova. The installation is expected to be complete in November, when the Sacramento Municipal Utility District will connect the system to the power grid. The power generated will be used by Aerojet, a GenCorp Inc. (NYSE: GY) company.

"We're making excellent progress on our Aerojet installation," said Kircher, a serial entrepreneur who succeeded with

# CLEANTECH COMPANIES TO WATCH

## Six get the jump on a growing economic sector



PHOTO COURTESY OF SOLAR POWER INC.

Solar Power Inc. is building about \$23 million in commercial projects this summer.

another Roseville company that also took advantage of low-cost manufacturing overseas — LED-screen manufacturer International DisplayWorks Inc. The company sold in 2006 for \$243 million worth of stock to Flextronics International Ltd.

Solar Power employs 60 in Roseville and another 350 at its manufacturing plant in China. The company is taking a "very preliminary look" at the idea of doing some manufacturing in the United States, Kircher said.

"We think the U.S. could quite

possibly be the largest market (for solar) in the world here in another year," he said. "The new administration has implemented some terrific subsidies that really promote renewable energy."

Some subsidies will be for products, including new technologies, built in the United States, he said. "We need to analyze if that makes sense," he said.

Solar Power is building about \$23 million in commercial projects this summer, including the Aerojet project and a 500-kilowatt system for Costco Wholesale Corp. in Issaquah, Wash.

#### SYNAPSENSE CORP.

SynapSense of Folsom is not a traditional cleantech company — or one that generates an alternative source of energy — but rather it works to make power-sucking data centers more energy efficient.

SynapSense has developed wireless-sensor network technology that allows data center operators to reduce energy costs and carbon footprints. Data centers consume up to 60 percent of the energy used in commercial buildings.

Last month, BusinessWeek magazine and market researcher YouNoodle teamed up to identify 50 tech startups flying under the radar. SynapSense was



Pete Van Deventer

on the list of 50 fledgling companies from the United States, China, India, Israel and Russia "that are attracting some early buzz and are poised to grow beyond their regional or niche-market origins."

And in June, Hewlett-Packard said it will sell wireless sensor equipment from SynapSense branded as H-P Environmental Edge for data center monitoring.

In March, the three-year-old company received \$7 million in venture funding after raising \$11 million as part of a Series B financing round last year.

Also last year, SynapSense landed a partnership with IBM Corp. (NYSE: IBM). And this year SMUD bought the wireless technology for about \$18,000 for a 3,000-square-foot data center.

SynapSense has declined to disclose revenue, a head count or customers but has said its products are improving the energy efficiency of data centers of "the world's leading stock exchange and America's largest mobile phone operator," for example.

The company is using the \$7 million to further develop its technology and expand into other market segments. Last month, it announced a "branch circuit monitoring" technology that helps data center operators better understand their capacity for power and manage it accordingly.

SynapSense was founded by former Intel Corp. executive Pete Van Deventer and University of California Davis computer science associate professor Raju Pandey.

#### BLOO SOLAR INC.

Another UC Davis spinoff, Bloo Solar of West Sacramento aims to provide "affordable clean renewable energy for everyone" by using ultra-thin photovoltaic materials in its solar panels.

The five-year-old, pre-revenue company, whose technology was originally developed in a UC Davis laboratory, last month closed a Series A round of financing of just under \$3.5 million. A New York-based venture fund, an earlier angel investor in Bloo Solar, was the sole investor.

"They came back and liked what they saw and did an entire round by themselves," Bloo Solar president and CEO Larry Bawden said.

The six-employee company will use the money to continue developing its three-dimensional architecture for solar power systems.

"Our solar cells are the size of red

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blood cells,” Bawden said. “We put 33 billion of them on a panel.”

The cells are slightly larger than the tiniest nanoparticles.

Bloo Solar on Aug. 1 began outsourcing wafer production and development to a manufacturing plant in San Jose, and has plans to bring that work in-house in 2010. “Things are happening quickly and we’re moving as fast as we can to get the product to market,” Bawden said.

Bloo Solar is using the semiconductor wafers as the platform upon which it will build solar cells. The company could use some other material, such as glass or nickel, but the silicon wafers are relatively inexpensive and quick to produce. Forty 6-inch square wafers will be connected to create a solar module.

Most solar modules use crystalline silicon to form cells that can be grouped into panels. Thin-film panels are made differently. Manufacturers put tiny layers of light-absorbing materials onto glass or stainless steel panels.

Bloo Solar is among a subset of solar companies using nanomaterials, made from structures smaller than the width of a human hair, to increase the light absorption of thin-film solar panels.

**JADOO POWER SYSTEMS INC.**

Venture-backed Jadoo Power Systems makes fuel-cell power supplies for portable equipment that uses between 50 and 1,000 watts, from portable video cameras and walkie-talkies to covert surveillance equipment and military radios.

Leonard Devanna, Jadoo’s president and CEO, said interest in fuel cells has increased significantly in the past year.

Jadoo of Folsom was one of the first companies in the region to receive federal stimulus funding from the U.S. Department of Energy. Jadoo received a \$1.8 million grant earlier this summer, a portion of the \$41.9 million earmarked by the American Recovery and Reinvestment Act, to develop better fuel cell technology.

The 1-kilowatt fuel cell will run on hydrogen derived from propane to power lighting and other equipment for the NASCAR Media Group and the Folsom police and fire departments.

And while Jadoo already has been granted funding on its NASCAR project, the company has submitted additional proposals for creating an emergency backup power supply using fuel cells and for using fuel cell power to replace smog-belching commercial lawnmowers.

Jadoo’s principal customer is the U.S. Department of Defense. The company late last year won a contract with the U.S. Air Force to provide a portable power supply that will be used to power medical equipment that stays with injured soldiers when they are evacuated.

**WINDENSITY**

WINDensity, which does business as Marquiss Wind Power, is developing wind turbines for commercial rooftops.

A year ago the early-stage company bought seven patents from Cirrus

Technologies Inc. of Carson City, Nev., for an undisclosed amount. Now, WINDensity is focusing on commercializing a cylindrical turbine technology developed by Cirrus.

The patents have been installed and tested at the Desert Research Institute, part of the Nevada System of Higher Education. Marquiss had been trying to develop its own turbine technology, but a cash crunch halted the plan.

The company has raised about \$2 million to date. Farid Dibachi, a partner at the company’s biggest investor, Velocity Venture Capital LLC, took over as chief executive officer on Jan. 1. At that time, he said the company aimed to start commercial production in 12 to 15 months. He said the two-employee company needed \$2 million to fulfill that business plan.

“Using our patent-protected technology, we are focused on building a substantial company with a game-changing product and deployment strategy,” Dibachi wrote in an e-mail this week. “At the moment, we have decided to continue to build our company with a laser focus on product development.”

**PARAMOUNT EQUITY MORTGAGE**

Paramount Equity Mortgage, a finance company focused since 2003 on saving homeowners money on their mortgages — and later auto and homeowners’ insurance — now wants to save them money on their energy bills.

A month ago, Paramount launched a new division, Paramount Energy Solutions, which aims to do just that. Paramount is partnering with Foster City-based SolarCity to provide solar power systems, financing and installation to homeowners. Paramount president Hayes Barnard said his company has an exclusive partnership with SolarCity to offer its products and tap into its unique solar system lease program. A typical solar system can cost between \$20,000 and \$40,000, Barnard said.

Paramount sells the solar panels and installation. Homeowners can choose to pay for the system using traditional financing, such as taking out a bank loan or paying cash, or, if they have a credit score above 700, they can put solar panels on their home for no money down by leasing the system and making monthly payments. The system is then owned by the bank. When the house sells, the buyer can assume the lease or it can be included in the purchase price of the home, Barnard said.

“Financing today is a bigger driver for solar adoption than technology,” he said. “The technology is there. It’s highly efficient. It saves people money. But the big question is, how do people afford it?”

Energy bills are reduced on day one, he said.

Paramount has just more than 200 employees. About 120 are in the Sacramento region. The rest are in San Diego, Oregon and Washington. The company has “several million dollars” in annual gross revenue, Barnard said.

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**Larry Bawden**



**Farid Dibachi**



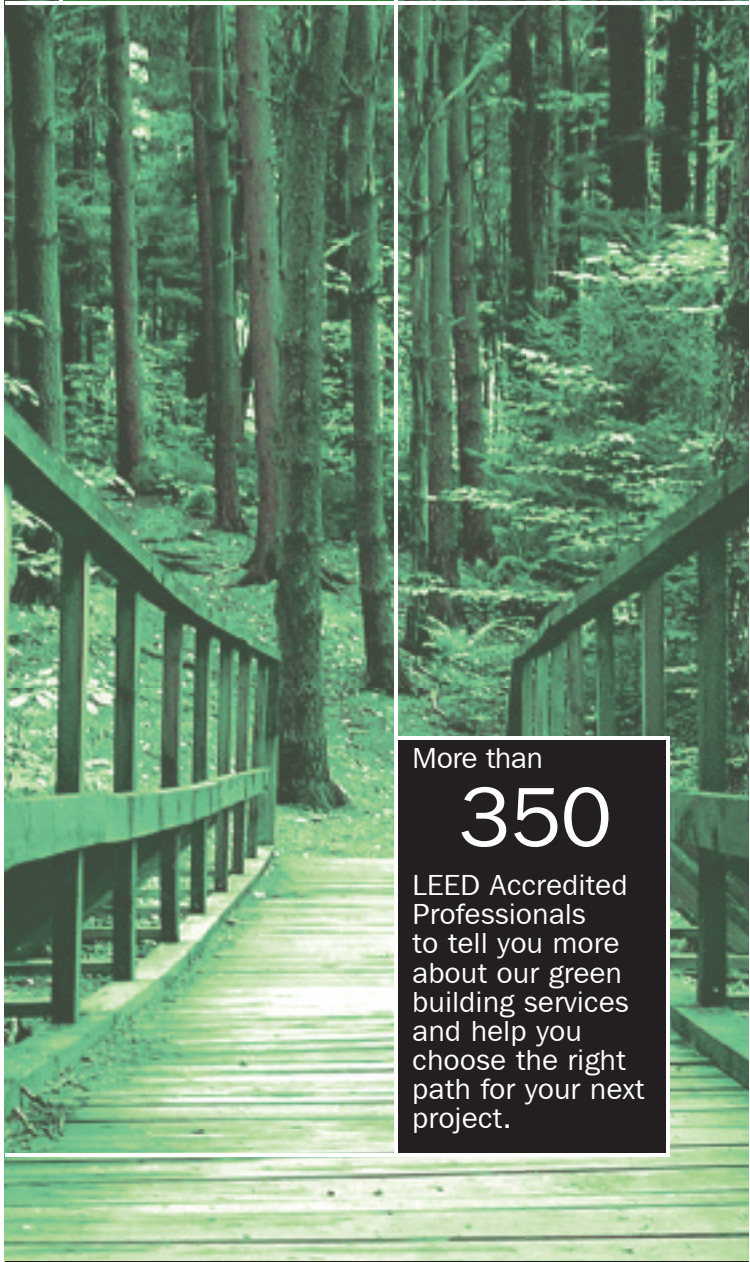
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