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February 11, 2008

ENERGY

Investors

Betting on Green

Venture capitalists are pouring money into clean-energy companies. Here's an early look at where -- and how -- it's going.

By **REBECCA BUCKMAN**

February 11, 2008; Page R14

Venture capitalists have been pouring billions of dollars into "clean-energy" start-ups -- producers of solar panels, biodiesel fuel and even eco-friendly drywall.

While it is too early for most investors to see a big payoff from these deals, some early winners and losers have begun to emerge, creating a possible road map for future green investments.

THE JOURNAL REPORT



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As the Arctic gets warmer², oil and gas producers see the chance for a big expansion. But plenty of technological hurdles remain. Plus, for remote areas of poor countries³, getting electricity doesn't have to mean extending the grid. There may be a simpler way.

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To date, few clean-energy investments have resulted in blockbuster initial public offerings or multibillion-dollar acquisitions, which is how venture capitalists make their money. That's because many of these companies are capital-intensive long-term bets: It could take years for them to build the manufacturing plants and perfect the technology required to produce their products, so any profits are years away.

"It's literally too early to tell if many of these companies will be successes," says Tom Burton, who heads the clean-technology practice at law firm Mintz Levin Cohn Ferris Glovsky and Popeo PC in Boston, which represents investors and clean-tech companies. "It's a longer time to market than many people had expected."

Many venture capitalists are forging ahead anyway. They say they have little choice, as profits in the traditional technology industries favored by venture investors -- semiconductors and old-fashioned enterprise software, for example -- have declined.

Clean energy represents "the biggest set of new market opportunities to come along in a long time," says Ken Lawler, a partner at Battery Ventures in Menlo Park, Calif., which is devoting 20% of its investments to clean-tech companies. "It's something you have to be a part of."

Out in Front

In the first nine months of last year, U.S. venture investors poured \$2.6 billion into clean-energy start-

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ups, more than the \$1.8 billion invested in such firms in all of 2006, according to the National Venture Capital Association and Thomson Financial.

Among the early winners for venture capitalists, at least until recently, has been a sector known as electricity "demand response." Companies in this sector sell technology and services aimed at improving the efficiency of the U.S. power-distribution grid. They link together big electricity users -- industrial companies, hospitals, supermarkets or even private homes -- in a high-tech network that automatically reduces participants' electricity usage when the power grid is strained.

The technology might automatically turn off some lights in a hospital's parking garage during a peak power-usage period, or de-activate the special heaters that keep freezer doors from fogging up in the supermarket, says Tim Healy, the chief executive of **EnerNOC** Inc., a demand-response company in Boston. Big utilities pay EnerNOC to help them reduce power usage because it saves them from having to build extra capacity that would be used only occasionally. Network participants typically get paid for their conservation efforts by the demand-response companies.

Because they don't have to build expensive manufacturing or refining plants, demand-response companies generally require less money to get off the ground than solar and biofuels concerns. They are generating revenue already and have long-term deals with utilities, says J. Michael Horwitz, a clean-tech analyst with Pacific Growth Equities in San Francisco.

GREEN RUSH

- **The Situation:** Venture capitalists have been pouring money into clean-energy start-ups such as solar-panel makers.
- **Behind the Deals:** The investment frenzy comes as opportunities dry up in more traditional technology sectors.
- **The Bottom Line:** These are long-term, capital-intensive bets, so few have paid off yet. But some early winners and losers are creating a possible road map for future green investments.

Shares of EnerNOC, which went public in May, soared more than 90% from their offering price, though they have pulled back in the recent market turmoil. The company was backed by venture-capital firms such as Foundation Capital and Draper Fisher Jurvetson, both of Menlo Park, Calif., and Braemar Energy Ventures of New York and Boston. Foundation Capital earned a return of more than 10 times its original \$5 million investment made in 2005, says Paul Holland, one of the firm's partners.

Comverge Inc., a demand-response company serving the residential and commercial markets, was a lucrative investment for venture capitalists, as well. Shares of the East Hanover, N.J., company more than doubled from their April offering price of \$18, though they have given back those gains in the recent market upheaval. Comverge's backers included EnerTech Capital Partners of Wayne, Pa., Nth Power Technologies, of San Francisco, and RockPort Capital Partners, of Boston.

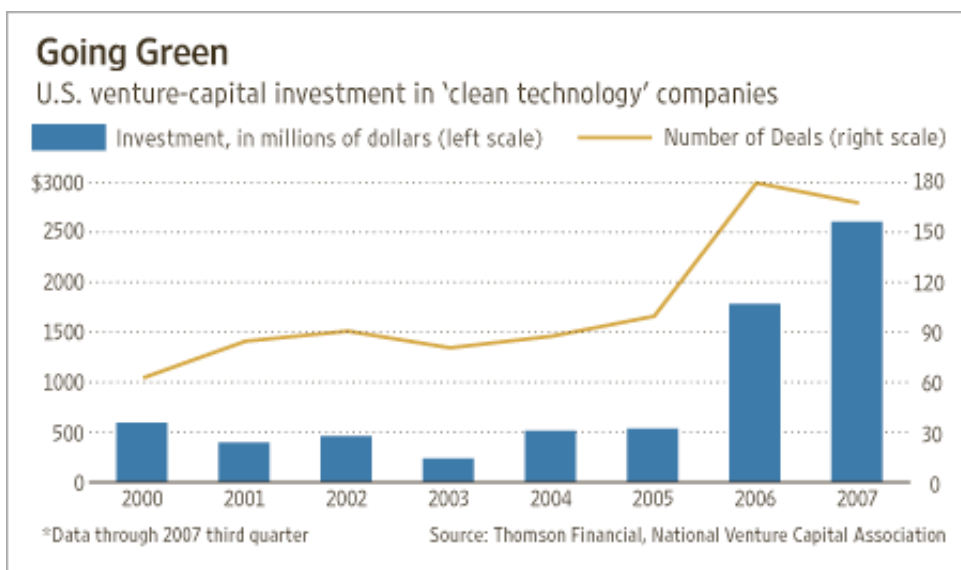
Venture capitalists are pouring money into solar-power concerns in the hopes they will follow in the tracks of publicly traded companies such as **First Solar** Inc. of Phoenix and **SunPower** Corp. of San Jose, Calif.

Shares of First Solar, which sells most of its products in Germany, France and Spain, were the best performing last year of any small or midsize company traded in the U.S. SunPower's shares also soared last year amid rising oil prices and investor enthusiasm about alternative sources of power. Several China-based solar companies also went public in the U.S. last year, though their performance has been mixed.

"There is a little bit of an investment frenzy" in solar, says Alain Harrus, a partner at Crosslink Capital, which backed SunPower.

Companies that make solar panels from materials other than silicon, which has become more expensive and scarce lately, have been particularly in vogue. Investors have poured eye-popping amounts of cash into them, including about \$110 million into Santa Clara, Calif.-based Miasole Inc.; more than \$121 million into Nanosolar Inc., of San Jose, Calif.; and more than \$112 million into HelioVolt Inc., a solar start-up in Austin, Texas, according to researcher VentureSource, which is owned by News Corp.'s Dow Jones unit, publisher of this newspaper.

So many similar solar companies have raised so much capital that "I'm just not sure how everybody can win," says Pacific Growth's Mr. Horwitz. Indeed, some solar start-ups have hit bumps in the road, including Miasole, which faced production delays last year and replaced its chief executive officer in September. Miasole declined to comment.



Suffering Setbacks

The biofuels sector, meanwhile, has handed venture capitalists at least one early disappointment.

Imperium Renewables Inc., a Seattle company that makes biodiesel out of vegetable oils such as canola oil, canceled a \$345 million initial public offering in early January, citing unfavorable market conditions. That came two weeks after the company said its CEO had resigned.

Backed by venture outfits such as Nth Power and Technology Partners of Palo Alto, Calif., Imperium Renewables had planned to use the IPO proceeds to build plants in Hawaii, Philadelphia and Argentina.

A spokesman for the company, which runs a large biodiesel facility in Grays Harbor, Wash., declined to comment. Board member Nancy Floyd of Nth Power said she remains "really optimistic" about the company, despite the scuttled IPO and some recent layoffs.

Many biofuels and ethanol companies have hit rough patches lately because of the soaring prices of raw materials, such as corn and palm oil, needed to make such fuels. Two publicly traded ethanol companies, **VeraSun Energy Corp.** of Brookings, S.D., and **Aventine Renewable Energy Holdings Inc.** of Pekin, Ill., each have seen their shares plummet more than 65% in the past 20 months. "If you're in the ethanol sector, you're getting hammered right now," says James Fulton, a lawyer who works with venture-capital firms and start-ups for Cooley Godward Kronish LLP in Palo Alto, Calif.

Critics also are assailing some companies that make biofuels derived from crops such as corn and soybeans, saying farmland used to grow those products could be used to grow food crops instead. As a

result, many venture investors are turning to so-called cellulosic ethanol companies, those that make the fuel from wood chips, switchgrass or other plant matter that doesn't affect the food supply as much.

"We developed a view a long time ago that corn ethanol was not economical," partly because it takes so much corn to produce it, says Ray Lane, managing partner at Kleiner Perkins Caufield & Byers in Menlo Park, Calif., which has invested in five biofuels companies, all of them now focused on cellulosic production.

It remains unclear, however, whether these cellulosic companies can make their fuels in large, profitable quantities, says Pacific Growth's Mr. Horwitz.

--Ms. Buckman is a staff reporter in The Wall Street Journal's San Francisco bureau.

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