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SMALL BIZ
By Jeffrey Gangemi

Green Growth Areas for Entrepreneurs

Which green sectors should entrepreneurs be watching -- and what determines VCs and angel investors' interest in a green startup?

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When technology entrepreneur Martin Roscheisen was looking for the next big thing in 2001, the Internet wasn't part of his plans. Instead, he looked to the field of solar photovoltaics (PV), specifically at work being done by a small, government-funded research company named Unisun Corp. Roscheisen recruited one of Unisun's main researchers, and in 2002, he and his newly incorporated five-person company, Nanosolar, sought funding in California's Silicon Valley. The pitch: thin-film solar cells that could be produced for less, more efficiently, and on a significantly larger scale than standard solar paneling.

After receiving seed funding from Google (GOOG) founders Sergey Brin and Larry Page, Roscheisen shopped the idea around to the venture-capital community, but was met with skepticism. "They told us that no venture capitalists had ever invested in this—that this is something GE (GE) should be doing and that we should speak with them," says Roscheisen.

Four years later, with more than $50 million in funding from a variety of VCs, and a fast-growing staff of 50, Roscheisen believes Nanosolar is onto the next big thing. His company, whose ambitious slogan is "A Solar Panel on Every Building," is currently building the largest thin-film solar-panel factory in the world in California's Bay Area.

MORE THAN SOLAR. Roscheisen is not alone in his belief in solar. Last year, three of the five biggest IPOs were in solar photovoltaics. The industry is projected to grow from an $11.2 billion business in 2005 to a $51.1 billion business by 2015, according to the 2006 Clean Energy Trends Report by Clean Edge, a clean tech-focused research and consulting group. VCs put more than $150 million into U.S.-based companies like Nanosolar in 2005—double the amount of investment from 2004, according to the report.

The mood among investors, particularly within the venture community, has undergone a sea change in the past couple of years. Constant media attention surrounding global warming and hybrid vehicles has brought clean and green front and center because of its prodigious growth potential (see BusinessWeek.com, 5/8/06, "Ethanol Cars You Can Buy Now").

Clean Edge co-founder and principal Ron Pernick says other green technologies aren't far behind solar. "We're going to see a lot more in biofuels—ethanol and biodiesel—and also advanced lithium-ion batteries, as well as systems integration and packaging of these types of technologies," he says.

MORE THAN ENERGY. Large-scale venture backing for clean tech is a relatively recent phenomenon. In 1999, clean energy technology made up less than 1% of the total venture capital. In 2005, it was at 4.2%, or $917 million out of $22 billion—a more than 25% increase from the previous year, according to the Clean Edge report. All of the largest venture capital firms have gotten into the act, joining a group of long-established specialist firms that had been around since the early 1990s.

But for apt entrepreneurs, green growth areas aren't limited to energy technology. Sales of organic foods are expected to grow 11% annually for the next four years, according to the Organic Trade Association's 2006 Manufacturer Survey. And the green building industry will grow to $38 billion, five times what it is today, by 2010, according to the National Association of Home Builders (see BusinessWeek.com, Summer 2006, "Do You Need To Be Green?").

So, how can entrepreneurs score the kind of financial backing that Roscheisen's Nanosolar received? BusinessWeek.com talked to fund managers at three major venture capital firms, and executives at two angel investor networks that fund small or early-stage companies to find out which green technologies they see as entrepreneurial hotspots now, as well as what are the green growth industries of the future.

Mohr Davidow Ventures (MDV), which currently manages a $400 million fund with interests in everything from software and systems

companies to clean tech and life sciences, is one of the large VC firms that funded Nanosolar. MDV has made six investments over the past several years, three of which they've announced publicly: Nanosolar, Jadoo Power Systems, and Energy Innovations. The other three remain under wraps.

"SOLAR FARMS." Erik Straser, a general partner at the firm, manages the clean tech area for the company. He says despite the flurry of solar-related activity, there's huge potential still left in it, since the problem of supply—which cannot keep pace with demand—hasn't yet been convincingly solved. More technology startups similar to Nanosolar's are in the works, but Straser says there's still a lot of money to be made in "solar integration," which includes the delivery, installation, and storage of energy produced by these systems.

Entrepreneurs can play a role in all types of solar development, says Straser. Besides improving the installation technology, "another business angle might be to buy lots of small installers and create a single large installer that could get better panel pricing and have other efficiencies of scale," he says, since solar-panel technology is supposed to become ubiquitous. "There's going to be solar farms at some point," he predicts. "Instead of growing wheat, the new farmers will grow energy."

Draper Fisher Jurvetson (DFJ), another large, mainstream venture capital firm, is dedicated to the clean technology industry. DFJ has been actively investing for about five years and has done approximately 12 deals. "We're probably the most active of the traditional venture funds," says Raj Atluru, DFJ's managing director.

BIOFUEL BONANZA. What kind of deals is DFJ looking to do in the future? "If I was an entrepreneur, I'd jump all over the advanced fuel industry," says Atluru. He says techniques of cellulosic ethanol production, which uses disposable materials rather than just corn, are being perfected in university labs. Adds Atluru, "Advanced fuels are where solar was three or four years ago." He sees huge growth potential and IPOs in the offing.

The research backs Atluru's claims. The market for biofuels hit $15.7 billion globally in 2005, up more than 15% from the previous year and is predicted to grow to $52.5 billion by 2015, according to the Clean Edge 2006 report. Ethanol is a fast-growing sector, with a number of pending IPOs (see BusinessWeek.com, 6/12/06, "Should You Bet on Ethanol?"). Alternatives to corn-based ethanol, still underdeveloped in the U.S., make up a huge potential market, says Atluru.

Aside from the large venture firms like DFJ and MDV, there is a group of smaller, more focused funds that are more likely to fund smaller or earlier-stage projects. The group includes Nth Power, Enertech Capital, and Chrysalix Energy Management, and has funded clean energy startups for more than a decade. Nth Power, founded in 1993, focuses on energy and advanced materials and manages more than $250 million and an active portfolio of more than a dozen companies.

ENERGY OPPORTUNITIES. Although Nth Power's main emphasis is energy production, its portfolio extends to other technologies and advanced materials. "We've funded companies in everything from sensor and sensor networks to batteries to advanced metering solutions," says Rodrigo Prudencio, one of the principals of the firm. Prudencio says it's critical for entrepreneurs interested in green energy technologies to ask: "Where are the pain points in the energy value chain as they affect oil, gas, and power companies, or how they affect consumers, and how can technology develop a business around that opportunity?" Prudencio says there is still great potential in developing smart metering systems that conserve energy in household and industrial environments.

But before pounding the pavement for funding, Prudencio also cautions today's entrepreneurs that not all opportunities are created equal, and thus, they don't all require large-scale venture funding. "If I'm in a business where accessing $5 [million] or $10 million will give me access to a $3 billion market, then pursuing venture capital makes sense. If I'm pursuing a $200 million market, it may make sense to bootstrap," says Prudencio.

Indeed, venture capital is far from the only type of funding available to green startups. Angel investors who support small social ventures are a good source for early-stage green companies.

Investor's Circle, a 160-member group made up of socially minded investors, is one such example. Since 1992, Circle members have invested more than $107 million in 171 deals, ranging from renewable energy and organic food to health care, education, and media, says Woody Tasch, the CEO and chairman of the organization. Members team up to gather injections that range from $250,000 to $500,000 for projects that might be considered too early-stage or too small for traditional VC backing.

WHAT'S RIPEST FOR INVESTORS. While many see trouble for smaller entrepreneurs in the organic food space with Wal-Mart's (WMT) entrance (see BusinessWeek.com, 3/29/06, "Wal-Mart's Organic Offensive"), Tasch says he sees growth and opportunity. "I wouldn't say renewable energy or organics are the easiest way to make money—the big home runs are still in finding the next Google. But you've got huge, relatively predictable movements in these sectors, so if you're trying to create long-term shareholder value and do some real interesting work, this is the place to be," says Tasch. He points to organic beef production as one example of a great green growth business possibility.

Carol Sands, founder and one of the managing directors of Angels' Forum, a private group of 25 investors who invest in small corporate and family venture funds that in turn invest in green technologies, couldn't agree more. Sands points to four common segments that make up the bulk of green investing possibilities—energy, transportation, water, and other green sectors. Of the four, Sands says the other sectors, which include energy management, new sensor technology, agriculture, and chemicals, may be the most ignored and thus ripest for entrepreneurial innovation. "It's going to be relatively easy to develop these technologies and isn't going to take a long time to adapt them—it offers a reasonable time frame with a reasonable rate of return," says Sands.

Sands says there needs to be more communication between the entrepreneurial types and lab rats, since there's a glut of great ideas just waiting to be discovered. "There are a large number of entrepreneurs who are searching for the next business…to get involved in. My answer to them is look to clean tech," says Sands.

FERTILE FIELD. The funding history of Light Engineering, a company supported by Angels' Forum, illustrates the boom in the industry. In 1998, when Matt Johnston, Light Engineering's CEO, was looking to fund his fledgling company, which could challenge traditional industrial manufacturing by producing cleaner, smaller motors and generators, both VCs and angels expressed little interest. Seven years later, Johnston says the industry is buzzing. "I gave a 15-minute presentation [on clean energy] just to help out a friend, and I was approached by about 30 people. It was pretty overwhelming. This is becoming a big topic again," says Johnston.

That level of interest signals to Johnston that it's almost time to sell Light Engineering, which he says he plans to do within two years. But just because some entrepreneurs are beginning to cash out, that doesn't mean green is anywhere near mature. With more and more funding possibilities, whether through venture capital, angel investing, or bootstrapping, opportunities for green entrepreneurs are rich.

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