

## VC pours his energy into a greener planet

By Matt Nauman  
Mercury News

Article Launched: 08/10/2008 01:36:28 AM PDT

### Green Energy

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Paul Holland coordinates the clean-technology practice at Foundation Capital, a venture capital firm in Menlo Park. Identified by the Cleantech Group as one of the top five investors in the segment (along with Kleiner Perkins and Khosla Ventures), Foundation takes a measured approach, investing in energy-efficiency and smart-grid technologies, rather than in higher-profile ethanol and biofuel plays. The firm recently closed a \$750 million fund, saying it will devote \$250 million of that to clean-tech investments. It also recently invested in a company that finances solar energy systems.

Holland, who is building one of the greenest homes in the Bay Area in Portola Valley, sat down with the Mercury News last week at Foundation Capital's new offices to talk about the future of clean tech. Here is an edited version of that conversation.

Q Clean-tech investments topped \$2 billion in the second quarter, another record. How long will this remain such a hot area for venture investors?

A I would say that we're entering the second inning of the clean-tech investing game, the second inning of a doubleheader. If you look at the requirements in terms of new energy needed and energy efficiency over the next 40, 50 years globally, the numbers

just don't match up. We're not making enough new energy to support what's happening on the planet.

I think Al Gore has not overstated it: It's the greatest opportunity of our lifetime. It's the greatest opportunity for the people being born now to go and solve this problem.

Q What has been gleaned so far?

A For Foundation Capital, the learnings are pretty straightforward. We started our notion of thinking of clean-tech investing back in 2002 with the idea that energy efficiency and issues around it were, at that point, almost completely non-invested, certainly under-invested.

So, the first lesson is there's nothing wrong with a capital-efficient investment, even in clean tech. The second lesson is, look what happens when you don't pay attention to the first lesson. Witness what a number of our friends have gone through with the debacles around biofuels - having to build sets of refineries and so forth. We believe there's a range of activities that really lend themselves to early-stage venture. And there's a range of activities where you can get in over your head very, very quickly and lose a tremendous amount of money.

Q There seems to be a new hot segment within clean tech every quarter - advanced lighting, biofuels, solar thermal. How do you decide where the opportunities are?

A Very broadly speaking, there are demand-based projects and there are supply-based projects. We've chosen, by and large, to focus almost exclusively on the demand-based (such as smart grid, smart materials, and fuel efficiency.) We're continuing to probe and are beginning to do some work around

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looking at new sources of supply - solar power, biofuel.

Q So, do those big solar and biofuel start-ups not knock on your door?

A I can't tell you how many solar-inverter companies we've been exposed to . . . how many concentrated solar power companies we've seen . . . how many coal gasification, clean coal companies we've seen. We haven't invested in any of those yet, in part because they're in an intensely crowded environment. It's a bit of a bar fight, honestly, in some of those markets. And you never know who is going to win a bar fight.

But when you look at where we have invested - the smart grid and next-generation networking technologies that apply to utilities and energy companies, middleware products that apply to utilities - those are all places that have had a fairly constrained competitive environment. They require a certain amount of IT to be successful and, more important, they require really, really smart people there.

Q So, tell me about some of the companies in your clean-tech portfolio.

A SunRun is our first foray outside of the demand side of the equation. It's the first real residential power-purchase agreement company.

We have two companies in green materials - one in cement and bricks (CalStar Cement) and the other in drywall and window technology (Serious Materials).

I'm thinking of this as the next industrial revolution. Many of the things we've done in the first industrial revolution were associated with the notion

that energy was free, bountiful and would always be that way. In the second industrial revolution, you have to now pay attention to the energy that is used and you also have to be concerned about the carbon off-gassing.

In our smart-grid arena, we have EnerNOC, which is doing well and went public last year. (EnerNOC, based in Boston, supplies utilities with a network to coordinate energy-saving efforts.) Silver Springs Network just won the PG&E contract, one of the largest contracts in history associated with smart-meter management. EMeter has a middleware component that interprets the data coming from the smart-meter, and is already a dominating presence.

Q Why build such a green home?

A It's meant to be an energy-independent house, a non-fossil-fuel-oriented house, yet one which once you get over the custom elements, it can be reproduced if you want to go down that road. One fun thing is that our house will create more than enough energy to power all of our cars.

The notion is that we wanted to be in a place where, if our grandchildren came up to us in 40 or 50 years and said, "What were you doing back then to make things better?" We can point to the house and say, "This is what we did."

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