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## Follow the Money

### Three venture capitalists on what they're investing in -- and why

Few scientific and engineering challenges have sparked as much interest or activity in recent years as the drive to develop cleaner and more efficient energy.

One area of intense focus is clean coal, a term that refers to a number of processes that try to extract the energy in coal without releasing so much carbon into the atmosphere. Another effort under way is the building of new power-distribution networks, or smart grids, that will improve the efficiency of how power is delivered across the country -- and eventually the globe.

Many companies are at work on such issues. Among them: smart-grid developer Silver Spring Networks Inc., of Redwood City, Calif., and Accelergy Corp., a San Jose, Calif., company working on a method of turning coal into a clean-burning liquid fuel.

The Wall Street Journal's Alan Murray held a wide-ranging discussion with three venture capitalists: John Doerr, a partner in the venture firm Kleiner Perkins Caufield & Byers of Menlo Park, Calif.; Vinod Khosla, founder and managing partner of Menlo Park-based Khosla Ventures; and Bryant Tong, managing partner of the San Francisco-based venture-capital firm Nth Power. Here are edited excerpts of their discussion.

**The Power of Networks**

**ALAN MURRAY:** *Silver Spring Networks. This is a company you invest in?*

**JOHN DOERR:** Yes.

**MR. MURRAY:** *Is this an important part of the answer?*

**MR. DOERR:** Yes. It's very important. It's essential if we're going to have distributed, real-time, cost-effective renewable energy to power lives all around the planet. It's going to bring us

efficiency, it's going to bring us conservation. It's going to make smart the networks that are crucial to dealing with the energy-security challenge, the climate crisis.

**MR. MURRAY:** *Bryant, there are some people in this room who think clean coal is a contradiction in terms.*

**BRYANT TONG:** I think, of the technologies that we've looked at and have invested in, we're probably the most excited about [Accelergy]. For us it's more a longer-term vision, because there is no clean coal today. We believe that the technology pathway that Accelergy is on will get us closer to that, hopefully within a reasonable amount of time.



*Genesis Photos*

John Doerr

**MR. MURRAY:** *We've had a succession of speakers over the last 24 hours, all of whom said: "No coal. We're trying to get away from carbon-based fuels. Coal is not part of the answer."*

**MR. TONG:** Well, again, there is no one solution. If you take a look at the portfolio of companies we've invested in, it covers all different types of technologies. We probably have five, six solar companies that we've invested in. We have a number of demand-site management companies we've invested in.

**MR. MURRAY:** *Vinod, you haven't invested in either of these companies, so maybe you can be the arbiter here.*

**VINOD KHOSLA:** I didn't get to vote on whether I would or wouldn't invest. If Silver Spring Networks had come to me early in their cycle, in their first rounds, and said, "Would you like to invest?" you can't argue with success, absolutely I would have invested.

If Accelergy had come to me with the same question, I probably would not have invested.

Let me explain both and then maybe give you a slight perspective. Today, presuming I didn't care one bit about the environment, investments that are carbon-heavy are poor economic-risk-adjusted bets. The key phrase for me from Accelergy was, "We are petroleum-equivalent in carbon." Assuming that's true, it's a poor risk-adjusted bet.

There's lots of other details that we could go into, and it's hard to judge a company without understanding the details. This is naturally a shallow analysis.

If you take Silver Spring, you can't argue with success. There is a huge market. It's an important business. It's clearly scaling well, being very successful, and so why wouldn't I want to invest? I like making money.

Having said that, there is a confusion in the marketplace between building transmission and building a smart grid. People -- especially, I would guess, 90% of senators in Washington -- don't know the difference. One is about building capacity for transmission, and the other is about building the grid smarter. Between the two, I've said publicly, building transmission is 10 times more important. But a smart grid is environmentally fashionable and it's valuable. It's a good business, it'll impact power generation to the extent of 5% or 10% on efficiency.

**MR. MURRAY:** *But John, no entrepreneur can solve the transmission issue. The transmission issue is a complex political issue that involves being able to site transmission lines over people's property. That requires a government solution.*

**MR. DOERR:** It does. Or partnerships between innovators and government, or even innovators in government who work with innovators in industry. So I don't disagree with what Vinod has to say. In fact, I agree with him, we've got to do both.

We absolutely have to have smarter state-of-the-art grids, and that's going to involve both intelligence and better transmission and more capacity if we're going to recapitalize the way the world generates and uses power.



*Genesis Photos*

Vinod Khosla

**MR. KHOSLA:** By the way, we don't need government to build transmission. If we solve the eminent-domain problem, there's enough money in transmission that private industry would build all of it. They [governments] have to give you right of way and eminent-domain rights. So, it's not that difficult a problem to solve, and it's not about money.

#### The Price of Oil

**MR. MURRAY:** *When we were having these discussions a year ago, the price of oil was over \$100 a barrel and heading north. Now we're just over \$40 a barrel. That must have a huge difference on your investment calculations, doesn't it?*

**MR. DOERR:** I think you asked me that last year, and I don't know how to predict the price of oil for sure. No one does, right? What I told you then was that when we made investments we made sure they all made economic sense, without any additional incentives or subsidies, at \$45 a barrel. That's been the benchmark that we use. Are they much better at a \$100? Absolutely so.

I took my first trip to the Middle East a couple of months ago, and I met with one of the ministers in charge of -- I'm not going to say which one -- a great big fund, and I asked him, "So, what's your forecast for the price of oil?"

He said, "This is going to disappoint you. I think it's going to be \$30." I think at the time it was \$42 or something. I was really crushed, and I said, "Why? OPEC has declared that oil will be \$50 to \$60, that's their target." And he said, "Right, but they all cheat."

So, I think we have to take a longer view about innovation and how long it will take these ventures to mature. We can't get distracted by whether or not oil is \$30 or \$35, we've got to look out the four or five years it will take for any of these investments to mature in scale.

#### A Question of Credit

**MR. MURRAY:** *What about general economic conditions? Credit availability, the ability to launch any of these investments as IPOs. How does that affect your calculations?*

**MR. KHOSLA:** I'm sort of a permanent optimist. I actually think this is a great opportunity. Yes, we can't do an IPO. But I'll tell you every advanced project at Dow is being shut down, or at DuPont or at your favorite technology company. Those are the people who have the creative ideas, who will do the most advanced stuff, so the number of opportunities we are seeing with start-ups is going up. It's a great opportunity for us.

**MR. MURRAY:** *Are there good opportunities out there that aren't getting the money they need?*



*Genesis Photos*

Bryant Tong

**MR. TONG:** I think there are so many great opportunities now. Not just because there's more mainstream attention in this area, and you have a lot more really bright entrepreneurs moving into the clean-tech area. It's also because mainstream business is aware that this is a legitimate area, and you have products and services actually being bought because it makes sense and people want them, versus it being subsidized.

Right now, we're seeing many opportunities at one-sixth the cost as compared to a year ago. So, as an early-stage investor looking at new opportunities, all of a sudden the possibility of owning a much larger piece of the pie with the same amount of dollars has changed incredibly just from one year.

**Where's the Money?**

**MR. MURRAY:** *But let's look at this from a macro level for a second. Last night, Google CEO Eric Schmidt was talking about the need for a \$4 trillion investment to reach his goals for 2020. Where does that \$4 trillion come from? How big of a role do folks like you have to play? Is the money there to get the job done?*

**MR. DOERR:** The \$4 trillion is only going to come from the world's capital markets. It is not going to come from governments. More money flows through capital markets, even ours today, in a day, than goes through all the governments on the planet in a year. And \$4 trillion, I don't know if Eric's exactly right or not, but it's in the right order of magnitude.

I like to compare the energy-innovation industry with the Internet-innovation industry. Fifteen years ago, we didn't have a Web browser, think of that. Fast-forward to today, there are about a billion people on the Internet, and the Internet economy is \$4 trillion.

Fifteen years of rapid change transforms everything. Today, the energy economy world-wide is \$4 trillion. The number of people with access to electricity is two billion. So, by any measure,

the energy economy, which is going to be transformed, is larger than the Internet by several times. What I think that tells us is we need innovation. But all of the innovations on this stage are not going to be enough to get it done. We've also got to get the playing field right, we've got to get the marketplace rules right so that the innovations we want, the changes that we want, are funded profitably. If we get the right thing to do to be the profitable thing, it's highly likely that will be what happens.

**MR. KHOSLA:** Maybe I can give you a very specific example. I did a little analysis. If we said we want to replace all gasoline in this country by 2030, it's only 22 years. How much capital would it take? Far less per year than we invested in telecom during the telecom 10-year boom. That's pretty amazing statistics.

These numbers, you can make them sound very large, but when people can make money at it, when there's a rate of return, the investments start popping up in all sorts of ways.

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