The New York Times
nytimes.com

February 9, 2003

Can Energy Ventures Pick Up Where Tech Left Off?

By AMY CORTESE

FOR Andrew Beebe, the light bulb went off almost two years ago at a computer technology conference in the Arizona desert. Mr. Beebe, who had just sold his profitable Internet start-up and was wondering what to do next, picked up a book on harnessing the sun's energy — or, as he saw it, "how to hack photosynthesis."

At the time, March 2001, the computer industry was suffering from post-bubble shock and California was being racked by an electricity crisis. The normally zealous attendees at the annual gathering seemed dazed. After reading the book, Mr. Beebe, 31, was convinced that the almost-within-grasp promise of solar-, biomass-, hydrogen- and wind-generated power was "the new new thing." After returning to San Francisco, he became a partner at Clean Edge, a firm in Oakland, Calif., that is a consultant to energy start-ups.

Mr. Beebe's former company, BigStep, provided Internet services to small businesses. Now he is one of several former Internet entrepreneurs and professionals who over the last several months have quietly migrated to the emerging field of alternative energy.

With the threat of war in Iraq refocusing public attention on the United States' dependence on oil from the Middle East, renewable energy is regaining some of the buzz it had when Mr. Beebe was in diapers. It is attracting the attention of entrepreneurs and venture capitalists who not long ago were dreaming of riches on the Internet.

For now, the size of venture funds that are focused solely on energy is relatively small. About $2 billion is available to invest — as much as in two good-size computer-focused funds. About $488 million of that was actually invested in 2002. That is off from a peak of slightly more than $1.2 billion in 2000 but up significantly from the early 90's, when less than $25 million a year was being invested, says Nth Power, a venture capital firm with a long history of energy investing.

While interest is growing, enthusiasm has been tempered by the fact that renewable energy — particularly solar energy — has been the subject of optimistic pronouncements that have not always panned out. And some people who are racing to start alternative-energy companies once extolled the world-changing virtues of the Internet.

As they race to commercialize fuel cells, wind farms and solar panels, are Silicon Valley's whiz kids setting themselves up for another fall, along with investors?

Alternative energy, like the Internet a decade ago, is largely the realm of arcane technology and technologists. The newcomers see an opportunity to apply the formula they honed with the Web: take technology with big market potential and add managerial talent and venture capital. It remains to be seen, of course, whether that will result in the equivalent of Webvan — the Web-based grocery, a multibillion-dollar Internet-era idea that vainly searched for a market before going out of business — or in something as wildly successful as eBay.

"The tech refugees are moving in," said Martin Lagod, managing director of Firelake Capital Management, an investment firm that specializes in energy, advanced materials and communications companies. And he says that's a good thing. "They are technically savvy, know how to build companies and access capital," Mr. Lagod said.

Investors who were burned by buying into highflying dot-coms may think otherwise. And alternative energy, unlike the Internet, has a history. High expectations for it were punctured in the early 1980's when oil prices tumbled, making the new technologies uneconomic. With oil prices still relatively low, adjusted for inflation, selling alternatives like solar remains difficult.

"Solar is sexy and everybody loves it, but the fact is it remains too costly" for anything but niche applications, said Stanley R. Bull, director of research and development at the National Renewable Energy Laboratory, an Energy Department center in Golden, Colo. "We get concerned about overhyping some of these technologies."

In the 1970's, when solar energy was first commercialized as a source of heat for homes, promoters declared that the sun would also become a mainstream and affordable source of electricity in just a few years. Today, converting sunlight into electricity is still four times as expensive as coal or gas power, though the price has come down to 20 cents to 30 cents a kilowatt-hour from $1 in 1980, and advocates say technological advances will make it competitive with coal within a decade.

More recently, fledgling energy companies that went public in the last few years, like Capstone Turbine and Plug Power, have suffered along with the rest of the market, or more so. Shares of Capstone, which peaked at almost $100, can now be bought for less than $1; Plug Power, which soared to $150 a share during the California crisis in 2001, closed Friday at $5.05.

The outlook is uncertain. Deregulation, which should encourage the use of alternative energy sources, has been set back by the Enron debacle and market manipulation by traders during the California crisis.

"Some of the hopes and expectations about how quickly energy would be liberalized and how fast distributed generation would catch on have been dampened," said Nicholas Parker, a longtime investor in alternative energy and chairman of the Cleantech Venture Network, which brings together so-called clean-technology entrepreneurs and investors.

But advocates of alternative energy say things are different this time.

"Twenty years ago, a lot of the technology just wasn't ready," said Dan W. Reicher, an assistant energy secretary in the Clinton administration. He is now the executive vice president of Northern Power Systems, an energy engineering company, and a partner at New Energy Capital, which invests in alternative energy projects.

Today, he said, energy technology is more reliable and is often backed by giants like General Electric, which bought Enron's wind power business, and BP, which is pursuing several projects in solar energy, wind power and alternative fuels like hydrogen.

Advances in biological and materials sciences could become breakthroughs, advocates of alternative energy say. Most important, they add, the economics of alternative energy are beginning to look compelling.

Wind power, the most developed renewable energy source, generates electricity for around 4 cents a kilowatt-hour, putting it on par with coal. Advances in solar technology, like so-called thin-film materials that are being used in place of rigid silicon disks, may cut costs significantly, people in the industry say.

Biomass technology — which takes organic materials, waste products or gases trapped in the earth and turns them into fuel — is already widely used. It is attractive to companies like Cargill Dow — which has a biomass plant and is a joint venture of Cargill, the agriculture conglomerate, and Dow Chemical — because it also creates chemicals for plastics, clothes or carpets.

The market potential is certainly large. Electricity alone is the third-largest industry in the United States, worth about $300 billion annually. And of the two billion people in the world who the United Nations estimates are without electric power, some may be candidates for off-the-grid renewable sources of energy.

Governments are helping to drive demand, which could spur innovation. About 30 states encourage renewable energy; New York and California, for example, require that 20 percent or more of their energy supplies come from renewable sources in the next decade and a half. Mr. Reicher said, "It's a convergence of technology, policy and market forces that make clean energy such a terrific investment."

ENTREPRENEURS' and venture capitalists' enthusiasm for alternative energy stems partly from the continuing slump in the computer and telecom industries. "There's nothing much else to look at," said Ivor Frischknecht, a co-founder of Angara Database Systems of Palo Alto, Calif. He is investigating opportunities to invest in clean technology.

Venture capitalists are starting to follow the entrepreneurs into this unfamiliar terrain — with an estimated $90 billion in venture capital idle, they are looking for places to invest it. Kleiner, Perkins, Caufield & Byers, Silicon Valley's top venture fund, is reviewing deals in energy and clean technology. Draper Fisher Jurvetson, another well known venture firm, in October led a $13.5 million investment in Konarka Technologies, a start-up in Lowell, Mass., that is working on less-costly thin-film solar panels.

Many entrepreneurs see in alternative energy that rare and desirable condition — a disruptive technology that could transform entire industries, from energy to transportation. "This is really the Internet 10 years ago," Mr. Beebe said. "We're on the verge."

Such enthusiasm has been scarce since the bursting of the Internet bubble also deflated entrepreneurs' big dreams. They might be advised to be careful what they wish for.