

Cleantech Overcoming Challenges, Rough Years, Tesla VC Investor Says

Michael Davidson 12/4/13



Building revolutionary companies is not easy, and bad times have to be expected and endured. But dark days don't dissuade visionaries. Ask Henry Ford, Thomas Edison, or the innovators who built Silicon Valley's greatest companies.

In the eyes of Ira Ehrenpreis, an early investor in **Tesla Motors** (NASDAQ: **TSLA**) and a current director, it shouldn't be any different in the cleantech industry.

"No renaissance happens overnight, and none is without its challenges," Ehrenpreis said Tuesday at the **National Renewable Energy Laboratory's** annual **industry growth forum** in Denver. The federal laboratory runs the conference to bring together startups, entrepreneurs, researchers, and investors.

Ehrenpreis has seen a lot as venture capitalist who specializes in cleantech. He's a general partner at Palo Alto, CA-based **Technology Partners**, and is a well-known advocate for the industry. His experience and **role with the most celebrated cleantech company** of all have given him a unique perspective, and he sees signs of hope for the industry, even as some have tried to write it off of an overhyped fad.

"We have to remember as we try to create the cleantech sector, changes of this magnitude take time, and clearly we face formidable challenges, especially as the status quo is threatened," he said.

—**More than a pep talk.** Ehrenpreis has been a regular commentator on cleantech and is typically bullish, often repeating the catch phrase "there is green in being green." But on Tuesday, he didn't try to obscure the setbacks over the past few years.

There have been the high profile bankruptcies of **A123 Systems**, a battery manufacturer, and **Fisker Automotive**, an electric carmaker. Cleantech incentives that were part of the 2009 federal stimulus package have expired, and the industry became a political football.

“The confluence of economic uncertainty, political inertia, and these high-profile bankruptcies have shaken peoples’ confidence in cleantech,” Ehrenpreis said.

—**“Tourists” flee when times are tough.** Those factors contributed to a 33 percent drop in venture capital investment in cleantech in 2012, and that money largely went to established companies as VCs invested in later-stage or bridge rounds, Ehrenpreis said.

While companies are adopting leaner businesses models and pursuing “capital light” strategies, they can only stretch money so far in industry segments that require heavy research and development and manufacturing investment.

“We are not an industry like the bits and bytes world,” Ehrenpreis said. “Many cleantech companies have to cross the valley of death to get to the market.”

But the tough times have led to needed consolidation. Technological dead ends have been identified, and VCs who wanted quick returns are gone in favor of more patient investors.

“In the early days there were a few investors in the clean tech sectors....and then all of a sudden the tourists came, and everyone thought that cleantech was easy. A lot of the tourists have left,” Ehrenpreis said.

Ehrenpreis’s ultimate advice is to persevere and be patient—as Tesla’s investors had to be.

—**Hopes are not just hype.** But there has been good news, with renewable energy reaching some important milestones.

In 2012, 49 percent of newly installed electrical generation capacity came from renewable sources, according to the Federal Energy Regulatory Commission, and in October, **all the capacity added** to the grid came from renewable sources.

Meanwhile, the technology keeps getting better and cheaper. Finally, global demand continues to increase, and renewables appeal extends into the developing world.

“Faced with these challenges it’s too easy to get lost, to get confused in the myopia of the moment and to blindly extrapolate and reach a mistaken, distorted view of the larger picture,” Ehrenpreis said.

—**Ironically, natural gas might be showing the way.** One of the major headwinds facing cleantech is the price of natural gas. Prices have plummeted as oil and gas drillers have found more gas they can extract, and demand for gas is enough to lead to a boom in that industry as utilities turn away from using coal to produce electricity.

That industry’s fate provides lessons for cleantech, Ehrenpreis said.

Ehrenpreis noted that a number of prominent voices such as Allen Greenspan and The Economist magazine had written premature obituaries for the natural gas industry in the late 1990s and early 2000s. At the time, it was thought the U.S. would soon tap out its supply of natural gas that could be profitably extracted.

Then hydraulic fracturing, better known as fracking, and other innovations revolutionized the drilling industry, making gas reserves more accessible and productive. Fracking might be the bane of some environmentalists and cleantech advocates, but its impact has been staggering, turning the U.S. into “Saudi America” and making it possible that the nation will become a net energy exporter for the first time in decades.

The renewable energy industries have felt the impact, as power from cheap natural gas has cut the cost advantage that solar and wind energy were expected to gain against fossil fuels when the economic models for many renewable energy companies were developed in the mid-2000s.

“It has become clear that one of the most significant breakthroughs not just of the last decade, but maybe of our lifetimes, is the development of hydraulic fracturing and horizontal drilling. But more interesting than that is what the state of play was a decade ago,” Ehrenpreis said.

“There are so many important lessons and parallels to our sectors,” Ehrenpreis said. They include pessimism, incorrect forecasts, and underestimating the impact of government support. But also “mavericks challenging the incumbents and not listening to what the experts had to say.”

Cleantech sectors like solar, wind, and LED lighting have shown similar rapid advances in technology that are analogous to fracking. Innovation has driven down costs, leading to increased deployment. For example, the U.S. Energy Information Administration’s estimate of the amount of solar that would be deployed was low by a factor of 30.

—Incumbents are not innovating. Every major energy company and utility claims to be investing in new technology that is cleaner and more efficient, but tracking research and development dollars suggests otherwise, according to Ehrenpreis. Across the board, the energy sector invests about 0.3 percent of sales into R&D. By comparison, biotech companies invest the equivalent of 19 percent of sales, and software companies invest 14 percent.

The lack of investment means the industry is “underinnovated” and relies on technology Thomas Edison would recognize, Ehrenpreis said. That’s an opportunity for startups and investors as incumbent companies look to acquire innovative startups to improve their technology portfolio.

But it’s also changed the nature of clean tech investors. The venture capital investment divisions of major international companies have gained importance as traditional venture capital firms have lost interest, Ehrenpreis said.

That could be seen at the NREL conference. Germany-based BASF, the largest producer of chemicals in the world, Germany-based electronics and engineering conglomerate Siemens, South Korean electronics company LG, and Saudi Aramco, the state oil company of Saudi Arabia, all sent representatives.

“One of the most important ways of building out the cleantech industry is to bring together the entrepreneurs and the large corporates,” Ehrenpreis said. “Every year the bridge becomes stronger and more important. It’s not only the small companies that recognize it, but the big companies do too.”

It also has contributed to increased mergers and acquisitions activity, with a number of billion dollar-plus acquisitions in 2012.

—A different type of investor and entrepreneur. A few years ago, Ehrenpreis was proclaiming cleantech as the “third leg of the venture capital stool,” saying it would produce startups that would join IT/software and biotech startups in the portfolios of most venture firms.

Ehrenpreis didn’t say if he’d changed his mind, but he did note the routes successful cleantech startups follow to raise money is radically different than the software companies familiar in Silicon Valley. While they can draw on local angel investors and personal connections with VCs, cleantech startups are seeking money from international investors and targeting international markets.

“Where I am in Silicon Valley, most of the community that is largely focused on IT invests in local companies that hire local talent that build a U.S. revenue base to go public on a U.S. exchange. That had been the mindset, and nothing could be farther from a successful roadmap for our sector,” Ehrenpreis said. “It’s really globally where much of the demand and opportunities are.”

But if the sector has a challenge finding local investors, it doesn’t feel like it is having trouble attracting talented entrepreneurs and engineers, Ehrenpreis said. While that is an anecdotal measure, it feels like it indicates a shift in the industry’s fortunes.

“The pace of innovation is only going to increase as more brilliant, ambitious, determined people migrate into our sector,” Ehrenpreis said. “For so many years when I first got into the venture industry, the talent magnet was to IT and life sciences. There were few entrepreneurs who were thinking about spending their careers tackling energy problems. But now, we see some of the most accomplished entrepreneurs and executives from established industries deciding to invest their intellectual capital into our sector.”

“The flow of talent into cleantech is probably the best barometer of success in this decade and the best barometer of where we’re going to go in the next,” he said.

Michael Davidson is the editor of Xconomy Boulder/Denver. He covers startups, venture capital, clean tech, energy, aerospace, telecoms, and whatever else happens above 5,280 feet. Contact him at mdavidson@xconomy.com