

Watching the Detectors

Dennis Reid Built a Business Around Tracing and Measuring Hydrogen Leaks, Now New Applications Steer H2Scan Toward Profitability

By MARK R. MADLER
Staff Reporter

Hydrogen is the most abundant element in the universe; a colorless, odorless and tasteless gas that can be used in making petrochemicals or powering engines.

But when mixed with air, it can explode and preventing such occurrences led Dennis Reid to start H2Scan Corp. seven years ago to develop and manufacture hydrogen sensing systems, leak detection and measuring devices.

The privately-held company based in Valencia is on the rise as more applications are found for its products. Already employing 27 people, Reid said more hiring will be done in the next two years. A move to larger quarters will also be necessary to accommodate expected work associated with the creation of a "smart grid" by utility companies that need additional monitoring.

Having stayed in business with a specialized product tells Reid that he has the desire and the ability to attract investors.

"We've done a good job identifying the key markets and applications our technology benefits," Reid said. "We have products being sold to companies like Exxon Mobil, Conoco Phillips, GE, Boeing and many, many companies."

Question: Can you give some background on H2Scan?

Answer: I founded the company in 2002. I was a consultant for the predecessor company called DCH Technology. I started there in 1999. DCH got into financial troubles and in 2002 they put the company assets up for sale. They didn't file bankruptcy. It was for the benefit of the creditors. I put a bid in for all the assets and was the top bidder and was awarded the company in September 2002.

Q: Were there any lessons you took away from the experience at DCH that you applied at the new company?

A: The biggest thing I took away is they were going in the wrong direction in developing the technology. The technology is licensed from the Department of Energy. We are one of the success stories if you want to call it that from the DOE and Sandia National Labs. The technology was at least a proof of concept when it was developed there and then we actually took it to commercializability. The other thing I learned from being around DCH was cash is king. In order to keep the company you always got to be aware of where the next financing is going to be until you can turn the corner and become profitable.

Q: Is H2Scan in that position?

A: We are getting in that position due to recent developments in the smart grid area.



Detect: H2Scan President and CEO Dennis Reid shows off some of the company's detection products.

H2scan is on the path to profitability.

Q: During that phase from R&D to commercial, what were the challenges that you faced?

A: The biggest challenge was I had limited financing once we were into commercializability. For a small company even if you have a major technical advantage over your competitors it is extremely hard to spread the word about your technology to capture the market share in a timely manner. It is very difficult. One of the keys we have established is through partnerships. We are now actively in negotiations for some major companies to represent us in several of our key markets and applications.

Q: They will be distributing your devices?

A: These companies would be using and distributing the product.

Q: You were recently in Japan. How is

that country developing a hydrogen economy?

A: Japan is very advanced. They have homes that are powered by stationary fuel cells. They've made a commitment to the hydrogen economy. They are building faster than the United States. They are building an infrastructure for delivering hydrogen and using not only for fuel cell cars but also stationary products. Along with that they are a conservative country for safety. So considering hydrogen can ignite at 4 percent and air and can have an explosion at 13 percent or more, and the hydrogen molecule on an atom is so small you cannot attach an odorant so the way to detect a hydrogen leak is through sensors. That is another advantage for H2Scan where we are literally hydrogen specific.

Q: Is the U.S. or California doing enough to create a hydrogen economy?

A: I think California is trying to be very aggressive in this area. I know that Gov.

Schwarzenegger has proposed a series of fueling stations along the 5 (Freeway) corridor. California has been aggressive about getting fuel cell cars on the road. There is a lot of debate in the industry over just how successful fuel cell cars are going to be and when they are going to be deployed. A lot of people in Japan feel it's going to be a hybrid fuel cell battery that will be initially launched. There are some auto companies that are very aggressive in the fuel cell area.

Q: Are there more industries using hydrogen that have need for your products?

A: Fortunately we have solution for just about every industry. We have the advantage for having the ability to detect and measure low level and high levels of hydrogen. We have a real advantage on the process side where our sensor technology due to proprietary coding allows us to go into streams that contain contaminants such as H₂S (hydrogen sulfide) and CO (carbon monoxide) and so on and being benign to methane and propane, all of the other types of gases allows us to be very hydrogen specific, which is very unique advantage in the marketplace.

Q: As far as the smart grid, how do your devices apply to that?

A: We went through several years of development in trying to perfect a permeable coating over the sensor so we could withstand some toxic background such as CO and H₂S. It was because of the successful work with the coating that has allowed us to be one of the only sensor companies that can embed a sensor directly in transformer oil. In transformers one of the early indications of fault inside the transformer is it starts producing hydrogen. Because our sensors can go directly in the oil they can get a very early detection that something is wrong. With the smart grid coming on with utilities going for more metering and measurement capability it has put us right on the limelight of a key component for the overall sensing system, that is the measurement of hydrogen in the transformer oil. My vision is eventually every single pole transformers would actually have a sensor embedded to be used as an early indication that hydrogen is building up. It would be a huge breakthrough in the industry. Currently there is no sensor that is capable of being put into the small pole transformer.

Q: Any thoughts of taking the company public?

A: We've looked at various exit strategies and we have not settled on one particular path although I doubt whether or not we would go the IPO route. It's more likely that H2Scan would be acquired. There are many large companies that could use our technology and be a complement to their central program.

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