

## Eager to invest in green innovation

by Bruce V. Bigelow

From dot-coms to computer networking, telecommunications and biotech, the investors who run venture-capital firms always seem to be on the prowl for "the next big thing."

These days, the industry is buzzing about green technologies that offer alternative ways to generate energy and reduce the nation's dependence on imported oil - as well as new methods to decrease pollution.

The surge has more or less paralleled the rise in crude oil prices, which hit a record \$77 a barrel last summer. Recently, increased tensions with Iran were credited with pushing the price to \$66 a barrel.

Investments by U.S. venture-capital firms in green startups in the United States, Europe, Israel and China climbed to almost \$1.3 billion last year, nearly double the \$664 million invested in 2005, according to data from Dow Jones Venture One and Ernst & Young. Other research suggests venture investments in green startups last year were closer to \$2.6 billion - and represented a 78 percent jump over the \$1.6 billion invested in 2005.

**KEEN ON GREEN** - Hadronex co-founders Gregory Quist, left, and David Drake have developed a sensor that monitors wastewater levels in a manhole and transmits warnings of blockages. CNS Photo by Crissy Pascual.

To Erik Straser of Mohr Davidow Ventures, one of the fundamental forces at work is the unprecedented industrial growth in China and India.

"They are trying to do in the first half of the 21st century what it took the United States and Europe the entire 20th century to do," said Straser, who leads the firm's investments in energy, materials and software companies.

"As these countries industrialize, they are consuming all the natural resources and commodities that were lying fallow," Straser added. "In the past five years, China has gone from a net exporter of crude oil to become the third-largest consumer."

As a result, Mohr Davidow and a host of other venture-capital firms have embarked in recent years on a quest for new "clean and green" solutions.

"There are more venture firms active in this area," said Rodrigo Prudencio of Nth Power, a San Francisco venture-capital firm founded in 1993 to specialize in emerging energy technologies. "That leads to more collaboration and more competition, for certain. But we prefer having the ability to build syndicates with other investors in this area." The investment activity, emanating mostly from Silicon Valley, ranges from substitutes for petroleum-based fuels to new types of solar power, fuel cells, improved batteries, and even energy-saving software and computer chips.

"These are real companies with real products and real consumer demand," said Craig Cuddeback of the Cleantech Group, a five-year-old business that promotes green innovation by organizing conferences and providing industry research and other services.

In a bid to jump-start such activity in San Diego, Connect organized a "Clean Tech Venture Roundtable" on April 26 to introduce six green startups to the venture-capital community. The nonprofit organization is dedicated to promoting high-tech innovation and helping local entrepreneurs.

Among the local startups selected for the forum was Hadronex, an Escondido, Calif., company that has developed a simple sensor that monitors wastewater flow in a sewer-system manhole.

While most entrepreneurs look forward to "liquidity events," the term conjures a different and forbidding meaning for Hadronex co-founders Gregory Quist and David Drake.

Quist and Drake worked together for years on the San Diego County Water Authority board of directors. They say sewage spills rank as the biggest and most persistent worry for water-quality officials and environmentalists.

The backup from a simple blockage can pop a 300-pound manhole cover and overflow into streets, homes and creeks. A massive sewage spill in Manhattan Beach, Calif., in January 2006 closed miles of beaches and contributed to a \$2.5 million fine imposed two months ago by the Los Angeles Regional Water Quality Control Board.

The device developed by Hadronex attaches to the bottom of a manhole cover and uses a wireless connection to transmit a warning to sanitation officials if the water level rises - or if the manhole cover is removed. The warning can be transmitted to cell phones, pagers and a customer's secure Web site, so sanitation district workers can investigate the backup and clear the blockage before it spills into the environment.

Another startup, Riverside Technologies, has developed an industrial process that uses high temperatures to decompose discarded tires and recover the steel, rubber, oils and a valuable carbon-black material. Gases produced during the process fuel the furnaces used to heat the tires, said Jim Kelly, Riverside's chief executive.

The company has proved its technology at a demonstration plant in Toledo, Ohio, and has been seeking venture capital to begin construction of a \$36 million commercial plant in West Virginia, Kelly said. "I think we're fortunate in that we're ready to commercialize this technology at this time, when there is such a high awareness of this clean-technology phenomenon," he said.