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## Power-Grid Firms Gain Backers

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Venture-capital investments in technology that improves the reliability and efficiency of the U.S. power-distribution grid are gaining fervor as two companies head for the public markets.

EnerNOC Inc. and Comverge Inc., both "smart-grid technology" companies, filed for initial public offerings in the past few months. Behind them is an array of supporting technologies that all form a chain of investment opportunities, with one technology feeding into the capabilities of another.

"If you look at the grid today, it's still running on technology that was put in this field four or five decades ago," said Ron Pernick, a co-founder and principal of the industry consulting and analysis provider Clean Edge Inc., which has offices in Oakland, Calif., and Portland, Ore.

Since the late 1990s, venture firms such as Advent International, Braemar Energy Ventures, EnerTech Capital, Nth Power, and Rockport Capital Partners have invested millions in start-up companies selling technologies that could improve the grid, Mr. Pernick said. Investments in energy intelligence, which includes smart-grid technologies and sensing-and-monitoring technologies, climbed above \$450 million in 2006 from a 2002 trough of \$150 million, according to preliminary data from Clean Edge.


Of the two companies that have already filed IPOs, Comverge is the more mature. Founded in 1996, the East Hanover, N.J., company has built a business out of reducing demand during periods of peak energy use. It has contracts with several utilities to shave demand from consumers by doing things such as lowering thermostats in winter or raising them in the summer. By consolidating the incremental energy savings from minimally reducing demand at thousands of locations, the company claims it can free up the equivalent of one new power plant's capacity to utilities at times when they need that power the most.

Boston-based EnerNoc, founded in 2001, focuses on commercial energy customers rather than residential ones. Its model involves signing up commercial buildings that have backup generators and allowing those buildings to sell power to utilities by giving those utilities access to their generators. Utilities still avoid the massive capital costs associated with building a new power plant.

Investors call these types of demand-response technologies the "low-hanging fruit" of the nascent smart-grid market. To ensure a more-efficient network that can track power usage throughout its system, investors have put capital behind start-ups that are bringing to market broadband-over-power line services. These services will provide broadband-quality Internet service to rural communities that don't have access to high-speed Internet through DSL or cable-modem connections. In addition, these services offer utilities the ability to track current as it flows across the wire, and layer additional monitoring and control applications on top of the smarter network they've put in place.

"It's about embedding intelligence into the system," said Mr. Pernick. "At the end of the day, it's about efficiency."

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Currently, utilities lose between 50% and 70% of the power transmitted through their network before it even reaches the consumer. Broadband-over-power line services like those from venture-backed start-ups Current Communications Group LLC, based in Germantown, Md., and Pittsburgh-based BPL Global Ltd., will help utilities track that loss so that they can try to prevent it.

To fully enable the utilities to monitor power as it flows through their networks and into homes requires more than just the broadband overlay. Chipsets such as those from Ocala, Fla.-based Intellon Corp. or Shanghai-based Miartech Inc. have been developed to bring that high-speed computing power into homes and make internal networks of smart appliances. Wireless sensing-and-distribution networks like DeepStream Technologies Ltd., Silver Spring Networks Inc. and SmartSynch Inc. allow smart meters to transmit the data they're recording back to utilities to further extend the new smart-utility network.

"It's a very crowded market here with about 25 vendors in the space," said Battery Ventures Partner Jason Matlof of the smart-grid market. "That's never a very nice thing when you're a start-up."

Still, venture investors continue to find new start-ups to back. In September, GridPoint Inc., which combines smart-metering capabilities with a demand-response technology and a means of integrating distributed power-generation technologies, raised \$21 million from investors including Advantage Capital Partners, Altira Group LLC, Contango Capital Management and **Goldman Sachs Group Inc.**

"The smart-grid space is just getting ready to take off," said Steve Hauser, GridPoint's vice president of strategy for its utility division.

**International Business Machines Corp.** is one of several large software-and-systems vendors to launch a smart-grid offering for utility customers. The company is working to establish itself as an integrator of disparate-technology solutions, all powered at some level by IBM hardware.

IBM sees a role for start-ups, too, said Michael Valocchi, global energy and utilities industry leader at IBM Global Business Services. "The VC community has always played a key role in the emergence of these technologies. A lot of those [start-up] companies are folks that we look to for partnership opportunities," he said. IBM already does some work with Comverge and GridPoint.

Working with a large vendor like IBM can help a start-up overcome some of the hurdles associated with selling to a utility, Mr. Valocchi said. "A utility, by itself, is not going to buy an unproved, small technology," but the situation may be different if the start-up has a partnership with a larger firm.

Risk averse or not, utilities are hungry for new efficiency technologies. The buyout group looking to acquire Texas utility **TXU Corp.** has made the implementation of demand-side management technologies a key selling point of its buyout bid. TXU already works with Current Communications to provide high-speed Internet over power lines and grid-monitoring applications. The new buyout bid proposes a further \$400 million investment in conservation and energy-efficiency activities over the next five years.

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