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The screenshot shows a GigaOM article page. At the top, the GigaOM logo is on the left, and navigation links for 'PRO RESEARCH' and 'EVENTS' are on the right. Below the logo is a navigation bar with links for HOME, APPLE, CLEANTECH, CLOUD, COLLABORATION, MOBILE, and VIDEO. A search bar is located on the right side of the page. The main article title is 'ETV Motors Shifts Gears, Drops Microturbine Dream' by Josie Garthwaite, dated Nov. 19, 2010, 9:00am PDT, with 'No Comments'. Below the title are social media sharing options for Twitter (16 tweets) and Facebook. A small image of a car is visible. To the right of the main article is a sidebar with a 'Sign up to get GigaOM news!' form, social media icons, and a promotional banner for '99.999% Network Availability' featuring a runner and the text 'SELF-HEALING AUTO DISCOVERY BATTERY BACKUP' and 'The Winning Smart Grid Solution'.

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# ETV Motors Shifts Gears, Drops Microturbine Dream

By [Josie Garthwaite](#) Nov. 19, 2010, 9:00am PDT [No Comments](#)



Startup ETV Motors set out two years ago to develop “enabling technologies” for extended-range electric vehicles, including a gas microturbine generator and lithium-ion batteries. Now the Herzliya, Israel-based company is shifting gears. Executives told me in an exclusive interview that ETV plans to divest itself from the turbine business to focus on high-voltage, energy-dense battery cells for aviation, electric bikes and eventually plug-in cars.

Working on the battery and microturbine technologies in unison, said Arnold Roth, ETV’s chief operating officer, was like “trying to ride two horses at one time.” Make that two very expensive horses, in a time when capital has been hard to come by. Roth said ETV’s second round of financing “came on earlier than planned,” and the

company, which counts David Gelbaum's Quercus Trust among its main backers, had "thought capital would be available to continue development at the same rate. We were wrong."

### **The Battery Bet**

ETV plans to change its name to ETV Energy Limited, pending government approval, and it's in the process of raising \$15 million through an investment bank. According to Roth, the company still sees "several concrete market opportunities" for its microturbine technology, in both mobile and stationary applications. Yet the battery market is, "vastly larger than anything related to turbine activity," he said. Plus, "the results coming out of our labs are important enough to warrant, we believe, placing a large bet on that half of our operation."

ETV claims its lithium-based cells can deliver 50 percent more energy than state of the art cells and reduce the number of cells needed per pack, thereby cutting costs and weight. The technology involves high voltage spinel oxides for the cathode — a chemistry that ETV notes has been studied for years without seeing widespread commercial use because of damage caused by the high voltage. Working with researchers from Bar Ilan University, ETV says it has developed techniques, such as coating the raw materials and cathode, to overcome previous problems.

An important milestone for ETV's battery business has recently come within reach: its first revenue. Business development chief Robert Meshel told me [back in April](#) that ETV expected to see its first revenue before the end of 2010, through a deal that finally came to fruition during the last week. The company has secured an agreement (worth approximately \$2 million between now and 2012) with a global aerospace company to develop and deliver its batteries for use in aviation applications. Within a year to 18 months, Meshel said in an interview this week, ETV hopes to complete development of battery cells for automotive applications.

### **Building a Business**

A crucial question for ETV, and for many other early stage cell developers as they chart a course to commercialization, is whether it makes more sense to produce cells under its own name or license manufacturing out to industry heavyweights. "Getting this right will determine how well we do in an explosive market," said Roth. At this point, ETV plans to manufacture cells under its own brand and sell them to car companies and battery pack makers.

"Cells are where a very large part of the battery value is found," he explained. "Staying focused on cell technology and standing back while others assemble and package them in accordance with their specific needs makes the most sense to us, at least for now."

The company plans to set up a facility in Israel for pilot scale cell production, and hopes to "leverage overcapacity" in the industry once it's ready to outsource manufacturing for higher volume production, around 2014 or 2015.

## **Matchmaker, Matchmaker**

John Gartner, an analyst with Pike Research, expressed skepticism that a conglomerate would opt to enable a new competitor “just to make some short term cash.” But he said startup companies like ETV “may be able to join with existing companies if the new technology is more compelling than theirs.”

ETV is already sniffing around for strategic partners, and according to Roth the company is finding the most interest in Europe. But government incentives designed to cultivate the lithium-ion battery industry in the U.S. have their allure. “At any given point we could become an American company,” said Roth. Contrasting funds available for battery startups in the U.S. vs. Israel, he said, “Getting government funding in this country is heart breaking.”

## **Looming Glut**

According to the most recent projections from Lux Research, sales of lithium-ion batteries for transportation and grid applications will reach around 11 gigawatt-hours in 2015. But manufacturing capacity could be as much as 18.2 gigawatt-hours in that year. So as Lux analyst Jacob Grose explained in an email, “even with on-the-fly capacity adjustments from battery manufacturers, a large-format li-ion battery glut is a distinct possibility by the middle of this decade.”

Gartner acknowledged that “in theory” excess production capacity may arise around 2012 or 2013 if demand for electric cars, and the batteries that power them, is lower than expected. “But I expect many cell manufacturers to try and continue producing and instead selling into the grid storage market,” he said, noting that companies in the U.S. that have received government funding to produce batteries “will be under pressure to continue manufacturing and not rent out their facilities.”

## **Tough Climb for the Little Guys**

“Some cell manufacturing companies may not survive,” Gartner noted, “and startups may be able to purchase shuttered facilities at bargain prices if they can get the financing.” That won’t necessarily create a friendly environment for upstart battery cell companies. “Although the capacity will be there,” said Grose, “the oversupply will destroy margins by bringing prices down, and that will make it nearly impossible for smaller manufacturers to compete with the Panasonics, LG Chems, and BYDs of the world.”

ETV does not have an overly rosy view of what lies ahead. “Tough times await everyone, and in the nature of things the smallest players can expect the toughest time,” said Roth. But ETV isn’t discouraged by the likelihood of a product glut or price pressure right as it’s trying to pick up steam. “We are convinced this is a great moment for battery technologies that demonstrate superior cost-effectiveness relative to performance,” Roth said. “And that means us.”