



PowerGenix hopes to overtake NiMH dominance with alt-chemistry rechargeable batteries

Jeremy Jacquot, VentureBeat 05.30.2008



With the market for hybrid electric vehicles (HEVs) finally starting to heat up in earnest, several companies are making big bets on advanced rechargeable battery technologies. One of these is PowerGenix, a San Diego, Calif.-based startup that makes nickel-zinc (NiZn) batteries.

Another is ZPower, a startup that hopes to oust lithium ion as the dominant technology by developing advanced silver-zinc (AgZn) batteries. While they offer greater power density, AgZn batteries haven't been used much because they allow for far fewer recharges than lithium ion batteries. ZPower has now succeeded in increasing the number of times its batteries can be recharged to be competitive with the latter.



NiZn batteries are smaller, lighter and more powerful than competitor technologies, such as nickel-cadmium (NiCd) and nickel-metal hydride (NiMH). Because they contain no toxic materials, they are environmentally safe and easy to recycle. PowerGenix's CEO, Dan Squiller, said his company's batteries are 50 percent cheaper than lithium-ion and 20 percent cheaper than NiMH. Not only that, they also offer a major power boost over the latter: 30 percent more — which, for HEVs, could translate to a 30 percent mileage increase.

Squiller believes his firm's consumer AA batteries could grab a large share of the roughly \$400 million rechargeable battery market. Unlike its rivals, whose batteries' output typically peaks at 1.2 V, PowerGenix's rechargeable batteries boast a 1.65 V output — even higher than standard throwaway batteries' 1.5 V output. The company plans on inking several distribution agreements within the next 2 - 4 weeks.

Though he was coy on the details, Squiller told me PowerGenix had already secured over \$40 million in supply agreements with several major power tool companies in Asia and the U.S. When I asked him what his game plan was to take on the industry's heavy-hitters — companies like Sanyo, Panasonic and Johnson Control — he readily admitted that he didn't foresee PowerGenix competing on the same plane anytime in the near future.



PowerGenix's business strategy is two-fold: It plans on licensing its D-cell battery pack technology to OEM partners for the HEV market and, for all other device applications, will manufacture the batteries itself. One benefit of this strategy is that it avoids the need for PowerGenix to invest a lot of money in its own costly manufacturing processes: Because NiZn batteries are designed to use existing NiCd and NiMH processes, the firm will rely on its partners to build the batteries and incorporate them into a range of devices.

Squiller gave a blunt assessment of the battery industry's future landscape, predicting prices for lithium ion batteries would rise and deeming most emerging technologies, including nanowires and supercapacitors, still too early for commercial-scale production. Though he commended [A123 Systems'](#) decision to switch to a nanophosphate lithium ion technology for safety reasons, he said the move had come at a performance cost for its batteries.

He predicted his company would reach full-scale production by the second half of 2009. PowerGenix plans on raising a fourth round of funding this summer and is seeking another \$15-20 million to help it scale up its production capacity. It will start the round in early June and expects to wrap it up by the end of September. Squiller said he was looking for one lead investor with experience in the cleantech sector. PowerGenix has raised \$31 million so far and has received support from [Angelino Group](#), [Advent International](#), [Technology Partners](#), [Granite Ventures](#), [OnPoint Technologies](#) and [Braemar Energy Ventures](#) in the past.

His ultimate ambition is to replace all NiMH batteries with NiZn batteries — a decision he says makes sense from both a performance and financial perspective. Not too shabby for a technology that last saw its heyday in Thomas Edison's time.

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