

Companies to Watch

Energy Recovery

[Public: ERII]

www.energyrecovery.com

510-483-7370

San Leandro, CA

Chief Executive: G.G. Pique

What it does: Manufactures seawater desalination systems that significantly reduce their energy consumption, making the process much more affordable.

It hasn't been a banner year for venture backed IPOs. The first quarter saw only five new issues, totaling \$282.7 million in proceeds, while the second saw none at all. Against this dim backdrop, Energy Recovery entered the Nasdaq on July 2, issuing nearly 14 million shares at \$8.50 a pop, and raising about \$68.7 million in gross proceeds. The stock was tracking around \$11 at mid-month, with a market cap of \$552.96 million.


Ironically, the company relieved the IPO market's drought by staking its value on ending a more conventional, albeit global water shortage. As we've written here before, although over 70% of the earth's surface is covered in water, less than 0.5% of it is suitable for consumption (see "Water-Better than Black Gold?", November 2007).

Desalination of ocean water is not a new solution, but it's an energy intensive one. Energy Recovery's ceramic pump, called the PX 220 pressure exchanger, offers a solution. It desalinates seawater using conventional reverse osmosis, but recovers 98% of the energy from the high-pressure waste stream and channels it back into the system. So, where a conventional system may run you \$6-\$8 to desalinate a gallon of sea water, Energy Recovery's technology can produce the same results for \$0.80.

The company's entry into public markets took 15 years, and fueled its operations largely through private investments. But its timing upon reaching the market couldn't be better. Diminishing supplies of fresh water are an increasing threat to crops, livestock and economic growth in Africa and the MidEast; and the convergence of rapid urbanization, global warming and changing rain patterns has put increasing strain on accessible freshwater sources everywhere.

Energy Recovery's technology positions it favorably to capture significant share in the expanding global market for reverse osmosis desalination of seawater. There are approximately 14,000 desalination plants worldwide, but industry projections foresee markets in China, Algeria, Australia and India growing by at least 20% annually until 2015.

In the five years before it went public, the company's revenues leapt from \$4 million in 2003 to \$35.4 million last year. That signifies compound annual growth rate of 72%. It's expecting to reach revenues of at least \$40 million in 2008, and further projects revenues could reach \$100 million dollars within two years.

The company manufactures all of its devices, and over 80 designers, OEMs, and operators of water treatment facilities specify Energy Recovery's pump, including some heavyweights such as **General Electric** [GE], **Doosan Heavy Industries** (Korea), **Suez Degremont** and **Veolia** [VE]. 

PowerGenix

Private

www.powergenix.com

858-547-7300

San Diego, CA

Chief Executive: Dan Squiller

What it does: Develops and manufactures rechargeable nickel-zinc (NiZn) batteries that are substantially smaller, lighter and more powerful than nickel-metal-hydride or nickel-cadmium cells.

Lithium-ion cells have long been the darling of green battery advocates. But PowerGenix's nickel-zinc (NiZn) devices are a non-toxic twin to nickel-metal-hydride (NiMH) batteries. Among other things, that makes them a much easier alternative than Li-ion cells for automotive and other manufacturers aiming to replace incumbent NiMH technology.

NiZn batteries have been around since 1900, but the technology was tough to tame. The chemistry didn't support multiple charges/recharges because dendrites tended to grow on the zinc surface, short circuiting the electrodes. Plus, the zinc in the electrodes literally changed shape over multiple charge and discharge cycles.

PowerGenix's innovation is a patented electrolyte and electrode composition, which eliminated these issues, and enabled the technology to be packaged in a form identical to NiZn's main competition, NiMH batteries.

The technology has intrinsic benefits over NiMH and NiCd batteries. Like the incumbents, it is safe and nonflammable. But NiZn batteries are a third smaller and lighter, and completely nontoxic. They also have a lower internal resistance, which enables the delivery of significantly more power during periods of peak demand.

This wasn't as easy as it sounds. "In the case of NiZn we had a breakthrough in keeping the zinc electrode from deforming, and forming dendrites," said CEO Dan Squiller. "But once you do that it's akin to lowering the water in a swamp. You can see all the other issues that need to be addressed."

Since it was founded in 2000, PowerGenix spent most of its early years working through those other post-breakthrough issues, and the past few years addressing more conventional cell design and engineering challenges, like fitting the technology into a conventional cell structure and manufacturing line.

Its batteries are now ready for prime time, and PowerGenix already has over \$60 million in supply agreements signed. It's just started shipping in several markets, including lawn & garden and power tool applications, electric scooters—which collectively represent a \$900 million market. The company also plans to ship NiZn AA batteries—another \$400 million market—in time for Christmas. Plus, like any battery maker worth its salt, the company plans to compete for a share of the hybrid electric vehicle market, which is currently \$600 million and is expected to grow to \$2.4 billion by 2013.

Since it was founded, the company has undergone three rounds and raised \$31 million. It's in the process of a Series D round, which it hopes to complete in next 60-90 days. Squiller said the company is capital efficient, so the financing will fund operations until PowerGenix is cash flow positive in the second half of 2009. 