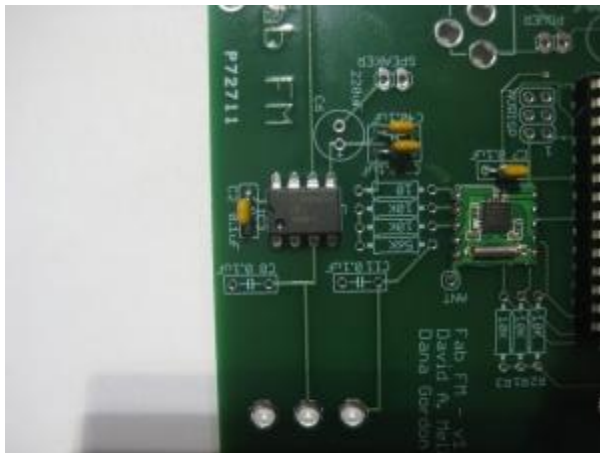




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Teaching High-Tech Gear New Greentech Tricks

By [Jeff St. John](#) Aug. 17, 2010, 8:05am PDT



Can clean technology companies cut a few hundred million dollars from their start-up capital needs by retrofitting old semiconductor fabrication equipment to turn out brand-new products? [AQT Solar](#) and [Planar Energy](#) are attempting just that for thin-film solar cells and solid-state batteries, respectively. If the advantages are anything close to what the two companies claim, it very well could be the start of a new trend.

Sunnyvale, Calif.-based AQT last week [announced the launch of its 15-megawatt-per-year manufacturing line](#) for copper indium gallium selenide (CIGS) thin-film solar cells. That's a field now dominated by startups like Solyndra, Nanosolar and Miasole, which have collectively [raised billions in venture capital](#). AQT, on the other hand, has raised only about \$15 million in its two years of existence. One secret to its low-cost, high-speed move into commercial-scale production, CEO Michael Bartholomeusz told me, is using [retrofitted hard disk drive manufacturing gear from Intevac to make its solar cells](#), rather than designing and building its own manufacturing platform.

“About \$2 billion has been spent to date trying to commercialize CIGS without a whole lot to show for it,” he said. “These companies, instead of being product manufacturers, became equipment manufacturers — making a platform, and then bringing costs down to make it a low-cost product.”

Manufacturing processes for semiconductors and solar cells already share a lot of similarities — but could the same processes be applied to new battery chemistries? Planar Energy CEO Scott Faris said the Orlando, Fla.-based startup is “building on 50 years of process knowledge in the semiconductor industry” to overcome the challenges facing solid state batteries — namely, painstakingly slow vacuum manufacturing that has [limited their size and power](#). Using mostly off-the-shelf semiconductor industry gear, Planar “can now build batteries like you build semiconductor devices, one layer at a time, and build these very rugged energy cores that can be stacked on one another,” he said.

Planar is looking at up to 18 months to bring a production-scale line up and running, and AQT Solar has only one announced customer with a 2-megawatt order for its 15MW line, so both still have a lot to prove. But with money hard to come by, the recycle-and-reuse approach to high-tech green manufacturing get more traction.

(Editor’s note: Welcome to Jeff St. John as [GigaOM Pro’s Green IT curator](#), and he’ll be bringing you lots of smart grid, green IT, greentech and energy efficiency research and reporting going forward!)

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