

## Lights Out for First Solar

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By Chris Laudani

There's a lot of negative sentiment around First Solar.

Jim Cramer -- not mincing words -- called it a "big government-sponsored boondoggle," and Tim "looking for value" Melvin is turned off by the company's sky-high valuation. Others are similarly wary of the stock. When there's so much negativity, I'm usually reluctant to jump on the bandwagon because I've been caught in these bear traps before.

Nowadays a bear's got to be careful. Hundreds of hedge funds are scraping the Web with the First Rain and **Alacra search engines**. They scrape millions of Web pages, count up the number of negative articles and try to force a huge short-covering rally. This strategy is particularly effective after a market-moving piece of research convinces a lot of people to get short.

Back in February, for example, Wunderlich Securities dramatically cut estimates for First Solar and dropped the stock 10 points. Everybody got short after the report because Wunderlich's thesis made so much sense. Then the stock roared back 30% in two months, as hedge funds forced a short squeeze off a strong quarter. Classic bear trap.

But just because the stock is up 30% in two months doesn't mean the bears are wrong. The old bears had bad timing. I believe the timing is getting better.

Photovoltaic solar cells have been around since the 1970s, but using them to harvest commercial amounts of electricity didn't take off until governments around the world began offering subsidies. In 2004, Germany introduced the first large-scale "feed-in tariff" system, which guarantees a price for solar power that makes every panel installed instantly profitable. Not too shabby.

Others followed suit, including Spain, Italy and Greece. As demand rose, semiconductor-capital companies such as Applied Materials (AMAT - commentary - Trade Now), jumped into the production end of the business. Chinese companies noticed the increased demand and began building PV factories. According to the California Solar Initiative, in 2007, just 2% of the panels in California were Chinese-made; by the end of 2009, 46% of panels were Chinese-made. By the end of 2009, China accounted for half of worldwide PV-panel production. Production and competition soared and panel prices plunged. That's when solar installations took off. According to *Bloomberg New Energy Finance*, in 2010 there will be demand for 10.5 gigawatts of new PV systems, up from just 1.7 GW in 2006.

Without subsidies, power from PV cells really isn't cost competitive. For example, according to the International Energy Agency, power from solar cells cost between \$200-\$600 per megawatt-hour. (Most estimates I've seen use \$400/MWh.) On the other hand, wind power costs something like \$50-\$70/MWh. Oil and natural gas are dramatically less expensive.

Given the generous 20-year guaranteed, instant-profit state subsidy, installations in Germany went through the roof (so to speak). Last year, Germany accounted for nearly half of worldwide solar installations.

In 2007, Spain initiated a somewhat similar feed-in tariff. By 2008, Spain was overwhelmed with projects. Within a year, it accounted for some 45% of worldwide utility-scale installations and had more than 2 GW installed before the government was forced to cap the feed-in tariff.

Germany finds itself in much the same predicament and has had to backpedal. It announced it would cut the subsidy by 16% for rooftop panels on July 1. The government also announced it would cut the subsidy by 15% for projects on "normal land" and 11% for "brownfield" sites (i.e. toxic waste dumps), and would totally eliminate the subsidy for solar projects on agricultural land. That set off a scramble to complete projects before the July deadline.

The solar industry seems unfazed by the cuts. The industry believes demand is so strong it can easily install capacity in a variety of Southern European countries.

Since First Solar uses a different technology, called cadmium telluride (CdTe), instead of silicon, the company believes it's largely immune to the changes affecting the industry. It believes its low-cost, thin-film technology and its pursuit of large "utility scale" projects give it a big advantage over other rivals. As the low-cost leader, it believes it can maintain its better-than-industry margins, since it doesn't compete in the commodity crystalline-silicon panel business. While that may work longer term, almost 70% of FSLR's revenue comes from Germany and about 10% of revenue comes from panels installed on German agricultural land. Management believes it can replace German agricultural projects with more rooftop sales and new sales from France, Italy and North America.

On the last call, management told investors it could maintain its price premium. Guidance seems to imply an average selling price of \$1.60/watt. Most Street estimates seem to be closer to \$1.48-\$1.50/watt. Average selling prices peaked in 2007 at \$2.48/watt. Gross profit margins peaked in 2008 at 54.4%, and the current Street gross-profit margin is in the high-30% range.

In order to maintain its manufacturing plants at 100% capacity, First Solar needs to take a larger-than-expected hit to margins. Italy, Spain, the Czech Republic and France are smaller markets than Germany.

The European Solar Industry Association expects the total capacity in those countries of 1.96 GW in 2010, or 18% of estimated global output, compared with 2.8 GW for Germany. And given the financial crisis in Greece, who in Europe is in the mood to continue to extend big subsidies? As I understand it, the subsidy is more difficult to obtain in Italy and Spain than in Germany. Yesterday, Evergreen Solar (ESLR) said it expects to see some pricing pressure related the reduction of subsidies in Germany and believes prices will drop 10% or so.

First Solar is trying to bridge the gap between a slowing Germany and a growing utility-scale sector. The company is adding to its utility-scale business by acquiring NextLight Renewable Power. The deal includes a 1.1 GW pipeline of new projects. Management believes utility projects are subject to less commoditization since utilities are somewhat less price-sensitive and will pay a higher ASP, at least in theory.

Even though First Solar has a cost advantage -- 81 cents/watt to build a solar module -- I believe the solar business is essentially a low-margin commodity business where pricing and margins will get crushed as demand changes. As larger utility-scale projects become a bigger part of revenue (and more competitors chase those types of projects) the company's lead times will stretch out. Gross-profit margins have already fallen from 54.4% to about 37%-38%, and will likely hit the low 30% range in 2011.

Also, total revenue growth is slowing. In 2007, total revenue grew 271% YOY; it slowed to 62% in 2009 and is headed to sub-38% this year.

The second half may be a harrowing experience. Management is confident because solar inventory is tight, but if you've ever followed the semiconductor industry, you know how fast orders get cancelled when demand changes. Tight inventory sudden turns into excess inventory in the blink of an eye. Watch out.