

UPDATE: Ampulse's new board member, Daniel Leff of Globespan Capital Partners, says Ampulse is on a "radically different cost curve." The startup's technology deposits a thin layer of monocrystalline silicon on a flexible sheet of metal.

[Ampulse Corp.](#) has raised \$8 million for developing solar thin films with crystalline silicon.

But the question now is, does anyone need it?

The Golden, Colo.-based startup snagged the A round funding from Globespan Capital Partners and El Dorado Ventures, Ampulse said Tuesday.

Founded in 2007, Ampulse licensed the technology from Oak Ridge National Laboratory and National Renewable Energy Laboratory. The technology aims to marry the efficiency of crystalline silicon with the flexibility and lower manufacturing cost of thin films.

Most of the solar panels on the market today are composed of cells that use crystalline silicon as the material for converting sunlight into electricity.

An alternative to using silicon is a group of technologies that deposit a thin layer of materials such as cadmium-telluride, amorphous-silicon or copper-indium-gallium-selenide on glass, metal or plastic. These thin film materials so far aren't as efficient at producing electricity as crystalline silicon. First Solar uses cadmium-telluride and is the largest thin-film maker in the world.

The startup is developing a process to deposit monocrystalline silicon on a thin sheet of metal, said Daniel Leff, a venture partner at Globespan and now a board member at Ampulse. The

technology promises to significantly cut production costs partly by foregoing the use of silicon wafers as a substrate, as conventional silicon cell makers do, Leff added. The company also could achieve high production rates, and that would further reduce manufacturing expenses, Ampulse said.Â

Ampulse hasn't reached the manufacturing phase, and Leff is mum about whether the company has produced any prototype cells or when it would begin pilot manufacturing. He is confident that Ampulse will be making a low-cost producer of highly efficient solar panels. The panel efficiencies would reach "high teens," Leff said.

"All I can say is Ampulse is on a radically different cost curve compared with any the out there, including First Solar's cad-tel," Leff said. "They will have the industry's lowest manufacturing cost, the lowest balance-of-system cost, and therefore the lowest levelized cost of electricity."

Ampulse was formed at a time when silicon was expensive and investors poured lots of money into thin-film startups. It also inspired conventional silicon cell makers such as SunPower to use thinner wafers and experiment with other ways to cut material costs and improve efficiencies (see).

One company, Innovalight, is developing a crystalline silicon solar technology that seeks to merge the advantages of silicon with thin-film production (see)

Innovalight changed its business model in the past year. Instead of making its own solar cells, it's licensing its technology to help solar cell makers boost their products' performance. The move was necessary to keep Innovalight's expenses down and avoid competing in a market with excess production capacities.Â

In the past year, the price of silicon has tumbled as demand lags behind production (see) Some solar panel makers have dropped the prices for their products by as much as 50 percent earlier this year. The pricing decline has slowed in recent months, executives said at Solar Power International, the largest solar industry gathering in the United States, last week in Anaheim, Calif.

"The price is falling slower and close to the bottom," said Mike Hall, CEO of Ampulse, a solar energy system installer that serves California, New England and New Jersey. "Demand in Germany has picked up, and the [U.S.] federal stimulus money is kicking in."

Leff said Ampulse would still outshine competitors even with the cheaper silicon and their push to improve efficiencies. Most of silicon panels use multicrystalline silicon. Monocrystalline is more expensive but also more effective at power generation. Ampulse aims to use less silicon than others.

Ampulse had been hunting for funding for a while. A year ago, the company's CEO, Steve Hane, said it was looking to raise \$10 million (see) The company initially raised \$2 million in seed money from Battelle Ventures, Innovation Valley Partners and the U.S. Department of Energy.

- [**New Form of Solar Energy: Direct Solar Fuel**](#)

Michael Kanellos **October 28, 2009** [1 comment](#)