SILICON SOLAR SOLUTIONS LLC

SNAPSHOT

The Company
Silicon Solar Solutions was founded by graduate students at the University of Arkansas around a technology that increases the energy output of solar cells and reduces manufacturing costs

The Technology
Silicon Solar Solutions has an exclusive license to a process for crystallizing amorphous silicon into large grain polysilicon with unparalleled grain size and ease of processing which reduces the COGS of a solar manufacturer by 26%, and at the same time increases the conversion efficiency by 20%

The Opportunity
Thin-film solar devices represent approximately $8B of the $40B solar industry and are slated to be the fastest growing segment. Projections have thin-film PV between $40-60B in 2020. Amorphous silicon solar cell manufactures are desperately looking for new innovations to be cost competitive with manufacturers using other materials (First Solar with their CdTe technology).

The Goal
$4.8 million in venture funding, a licensing agreement or joint venture agreement to begin manufacturing

Silicon Solar Solutions has a patent portfolio that addresses the high cost of materials in the solar industry. The key to reducing costs is using less materials and increasing the power generated by solar cells. The company's large grain polysilicon technology does exactly that and has applications in wafer-based and thin-film photovoltaics.

By increasing the size of the large grain silicon, the number of deleterious boundaries decreases. This is supported by long-standing research, but prior to this technology, large-grains were classified as one micrometer. With this technology, Silicon Solar Solutions has demonstrated grains of 150 micrometers. In addition to greater conversion efficiencies, this technology eliminates processing steps downstream and enhances light trapping allowing the device to be thinner. This greatly reduces the raw materials cost. Furthermore, the manufacturing of their Poly-Si cells requires processing temperatures between 150-300°C, in contrast to typical techniques that require temperatures in excess of 900°C. The materials and energy savings translate to 26% off the COGS for targeted manufacturers. Since the average targeted manufacturer produces over one and a half million panels annually, Silicon Solar Solutions' technology would save more than $200 million for a single manufacturer each year.

"We placed third in the WBT student competition last year, and now that most of us have graduated we are pushing the technology forward full time," said Douglas Hutchings, CEO, Silicon Solar Solutions. "Our technology is now ready for public consumption, and so we were urged by a mentor to apply as a presenter for WBT Innovation Marketplace. Our technology fits very well with the mission of WBT."

Silicon Solar Solutions is interested in securing a licensing agreement or joint venture in order to begin manufacturing. The only COGS on licensing revenues is a 5% royalty to the University of Arkansas for the exclusive license.

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