



## **Greentech Intelligence**

# VC INVESTMENT IN SOLAR ENTREPRENEURS, INNOVATION, AND CAPITAL 2005 - 2009

## **EXECUTIVE SUMMARY**

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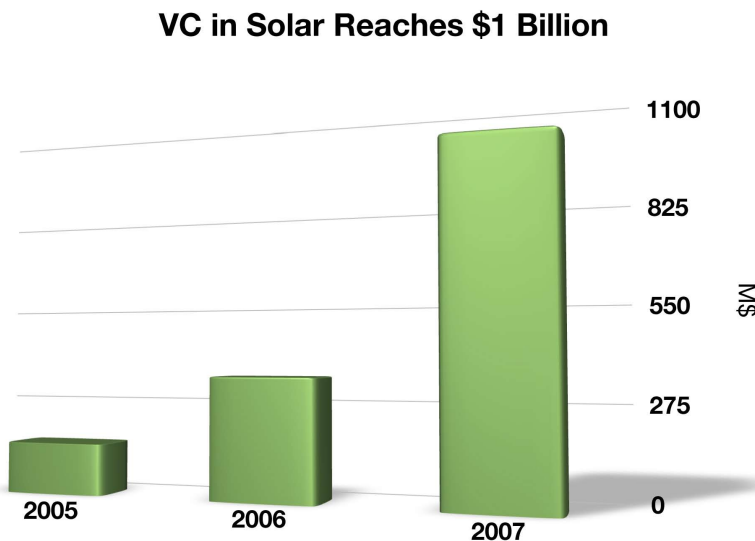
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## 1 INTRODUCTION AND KEY FINDINGS

### 1.1 Introduction

VC investment in the solar industry has gone from a few deals in 2004 to exceed a billion dollars in 71 deals in 2007, up from \$360M in 2006 and \$150M in 2005. An immense number, but not an immense surprise as VCs really like ~\$18B markets expanding consistently by 35% per year.

Figure 1: VC in Solar Reaches \$1 Billion



This VC-funded start-up wave has drawn the attention of incumbent solar vendors, investors, government labs, and has even reached public consciousness at the consumer level. Massive VC investment has been one of the contributors to a renaissance in the US solar industry (along with government funding, state and federal rebates, the CSI, and Renewable Portfolio Standards in 22+ states).

The major players in solar – Sharp, BP Solar, Q-Cells, REC, etc. have had to adopt an entrepreneurial mindset to maintain their technical and market leadership in the face of this VC-funded push to commercialization.

In 2000, VC investment in renewable energy was about 1% of total VC investment. In 2007 that figure was closer to 10%, with solar power alone making up about 3% of the entire Venture Capital asset class of ~\$33B. More than 60 start-ups have been funded by VCs in the last three years.

Based on current venture fund overhang, follow-on commitments, and our Greentech Media VC polls - we estimate that there will be an additional \$2.5B invested in existing and new players in solar between now and the end of 2009. It is a good time to be a solar entrepreneur. It is also a good time to be an investor in solar.

This furious VC activity is spurred on by a strong \$18B global solar market that has grown more than 35% per year over the last five years and is expected to do the same for the next four years. These investments are being made with the successful IPOs of First Solar, Trina Solar, Solar Fun Power, LDK Solar, and Yingli Solar still fresh in investors' minds.

A wave of consolidation in the module, materials, and solar services sector is expected in the next 12-18 months.

## 1.2 Key Findings

- ▶ 2007 was the year of solar VC with total solar VC investment exceeding \$1 billion dollars and representing ~3% of the entire VC asset class.
- ▶ VCs have an inordinate fondness for thin film solar companies, especially CIGS materials. They are going to have to invest even more in 2008 and 2009 to competitively scale these CIGS start-ups.
- ▶ Recent IPOs and M&A activity suggest that solar is providing venture returns and will continue to do so for the next few years.
- ▶ VC investment in solar is going to continue at this pace through 2009 owing to the \$5B+ of cleantech fund overhang and the likely follow-on rounds for the 60 early stage solar firms founded in the last three years.
- ▶ 2007 witnessed apparent progress on the VC-funded, CIGS commercialization front for Nanosolar, and 2008 will bear further technological disruption from CIGS, CdTe, and a-Si technologies.
- ▶ VC-funded Concentrating Solar Power, both thermal and PV, came on strong in 2007 with Ausra, Brightsource Energy, and SolFocus leading the way. Utilities like PG&E have become believers in CSP as they try to meet their RPS requirements. They are signing large-scale contracts with solar start-ups, a new type of utility behavior.
- ▶ 2008 will see more boardroom shake-ups like those at Miasolé, as start-up technologies meet challenges and business plans run aground.
- ▶ 2008 will be the breakout year for thin film solar. 2008 will also be a breakout year for solar services start-ups with more funding, more revenue, and increased competition and consolidation.
- ▶ Look for 2008 to be even more eventful for solar VC funding, solar start-up acquisitions, and a few interesting solar IPOs.

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