

From Silicon to Solar Valley - will cleantech save the day?

The U.S. Venture Capital market continues to hit the skids, which has been largely blamed on the global economic downturn and U.S. recession. Zero venture-backed IPOs were brought to market in Q1-09 representing the first time on record this has occurred in consecutive quarters. Austin based Solar Winds, Inc. and San Francisco based OpenTable Inc. are however scheduled to have public offerings in May. Overall U.S. VC investment fell to a 12-year low in the first quarter as just over \$3.0 billion was invested in 549 deals, down 47 percent in dollars and 37 percent in deals quarter-over-quarter. Double-digit declines were experienced in every industry sector; however, the National Venture Capital Association believes that investment volumes are trolling along the bottom and expects a mild and steady increase in investment throughout the rest of the year.

Silicon Valley VC capital flows reached a low unseen since Q2-07 at \$1.1 billion in Q1-09, in spite of increasing its U.S. venture capture rate to 38.6 percent. 61 percent more deals were completed in Silicon Valley than any other region in the U.S. The Valley's software industry captured 21 percent of VC investment dollars, followed by biotechnology (18 percent), semiconductors (12 percent) and medical devices and equipment (11 percent).

Cleantech's role in the Valley's recovery

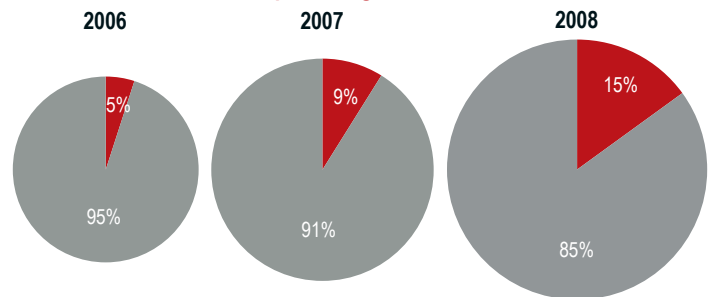
The cleantech sector experienced its lowest quarterly investment total since 2005 in Q1-09, seeing \$154 million invested in 33 deals nationally. This represented an 84 percent drop from Q4-08. However, \$83 billion in the American Recovery and Reinvestment Act (AARA) was dedicated to the cleantech sector via grants, loans and tax credits in February which will serve as the infrastructure for growth in 2009 and beyond.

VC cleantech investment reached \$4.1 billion in 2008, a 54 percent increase over 2007 and a \$3.8 billion increase from 2003. Additionally, VC investment into cleantech as a percentage of total investment has nearly doubled for three consecutive years to 15 percent. Solar continues to garner the bulk of cleantech investment followed by alternative fuels, pollution and recycling, energy storage, transportation and wind and geothermal energy. Six of the ten top venture backed cleantech companies in 2008 are Bay Area based, affirming the region as the global epicenter for solar R&D.

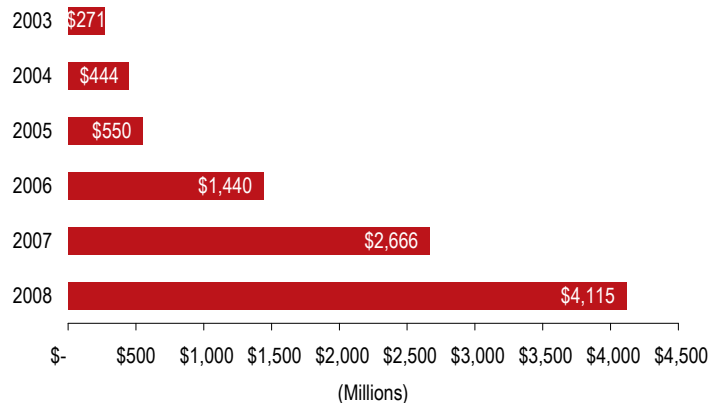
Top 2008 cleantech investments

Company name	Cleantech subsector	City	VC invested
NanoSolar	Solar	S. San Jose	\$299,999,700
Solyndra	Solar	Fremont	\$219,277,800
First Solar (OptiSolar)	Solar	Hayward	\$132,000,000
BrightSource Energy	Solar	Oakland	\$115,000,000
Recurrent Energy	Solar	San Francisco	\$75,000,000
Silver Spring Networks	Renewable Energy Storage	Redwood City	\$75,000,000

Cleantech investment as a percentage of total U.S. VC investment



U.S. cleantech VC investment



Source: PWC MoneyTree/NCVA

Not surprisingly, solar has been the predominant cleantech sub-sector active in the Silicon Valley commercial real estate market since 2008. Daystar Technologies, Ausra, CaliSolar, SVTC Solar, Serious Materials, Miasolé and Solyndra all completed significant leasing transactions for R&D, office and manufacturing space over the last five quarters.

Q1 2009 cleantech lease transactions

Company name	Cleantech subsector	City	Size (s.f.)
CaliSolar*	Solar	Sunnyvale	138,698
Serious Materials*	Solar	North San Jose	90,544
Silver Spring Networks*	Renewable Energy	Redwood City	65,000
Sierra Solar Power	Solar	Fremont	28,824
Solexant	Solar	North San Jose	17,754
CalStar Cement	Pollution & Recycling	Newark	16,377
Tula	Alternative Fuels	Santa Clara	5,624

* Represented by Jones Lang LaSalle

Solar is not by any means the only clean technology burgeoning in the Bay Area. Geothermal is another hot spot, and the State of California and Federal Government have laid out the framework to increase funding and dependency on geothermal energy for future consumption needs. California already operates 43 geothermal energy plants which generates 4.5 percent of the state's total system power (half of all power produced by renewable energy sources in the state). The State has also enacted legislation that forces utility companies to generate and sell no less than 20 percent of their power from renewable resources by 2010.

It's difficult to pick up the paper and not read about the auto industry's white horse - Tesla Motors. Tesla utilizes the world's most advanced lithium ion batteries to power their electric luxury vehicles. Battery technology and renewable energy storage has been prominent in the Bay Area cleantech arena for years with leading companies including Imara Corp – formerly Lion Cells, Inc. (Menlo Park), Silver Springs Networks (Redwood City) and Deeya Energy (Fremont) receiving significant rounds of funding over the last 18-months. Tesla's front office and R&D facility are located in San Carlos and the company has been actively searching for a Bay Area location to develop a power train manufacturing facility. Tesla is waiting to hear if their \$350 million loan application has been approved for the Department of Energy's Advanced Technology Vehicles Manufacturing Loan Program before committing to such a large scale project. After coming close to signing an agreement with the cities of San Jose and Santa Clara to lease 89 acres of land and developing a 600,000 s.f. facility and head office in September 2008 they are now looking for a 'brownfield' site to redevelop which is more heavily favored by the federal loan program. The facility is expected to generate up to 1,100 jobs.

In addition to an array of start-up companies being funded by VCs across all subsectors of cleantech, Silicon Valley stalwarts are spinning off cleantech

divisions and investing heavily in start-up companies themselves. Google, through its philanthropic arm google.org is investing in proprietary enhanced geothermal systems and has made significant investments in companies such as AltaRock (geothermal) Makani Power Inc. (high altitude wind) and BrightSource Energy Inc. (solar). Intel spun off a division called SpectraWatt which will supply photovoltaic cells to solar module makers and develop improvements in current manufacturing processes and capabilities to reduce the cost of photovoltaic energy generation. Intel, IBM and most recently, Cisco are also aggressively ramping up their "smart grid" technology arms. Redwood City based Silver Spring Networks also is a leader in smart grid technology which is open source platform aimed at monitoring the U.S. energy grid. Smart grid technology is thought to be able to save utility companies up to \$20 billion annually in unrealized revenue. San Mateo-based eMeter Corp. raised \$22.5 million, including \$12.5 million in April, to ramp up production of its software that analyzes data retrieved from the grid.

Although cleantech is still thought to be in its infancy, it is clearly one of the Valley and Bay Area's main drivers of innovation. Backed by significant capital and fed by the pipeline of graduate degrees from the region's higher education institutions, the industry possesses the potential to generate thousands of local jobs and technology, help solve the U.S. dependency on foreign oil and lower greenhouse gas emissions. Even in its immature state, cleantech has helped soften the blow of depressed tenant demand in the R&D and industrial commercial real estate markets during these turbulent times; although it has by no means been able to absorb square footage losses from traditional high technology sectors.

Cleantech real estate demand has also benefited the Valley as companies across all subsectors have generally leaned to leasing single-story flex buildings which were, in many eyes, deemed to be obsolete. They have been drawn to these older properties primarily because of the existing infrastructure from previous technologies (typically mechanical and electrical systems from the semiconductor industry) which can be leveraged and reused in their R&D and fabrication processes. These properties also typically have lower rent which is a function of their non-infill locations such as Fremont and South San Jose. It remains unclear which or even if clean technology will emerge to the same degree as other high technologies have as their efficiencies both in reliability and cost are generally unproven; however, it is clear that the Bay Area and Silicon Valley have a foothold on the sector and will facilitate the industry's growth for years to come.

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