Who's got money for clean tech?

Following the financial crisis, are things getting easier for early stage companies and those ripe for investment?

New funds such as the launch of the **CalCEF Clean Energy Angel Fund** give grounds for hope (at least for start-ups in the USA). As **Susan Preston** explains (*see opposite and page 6*), her California organisation is set to address the funding gap with a "seed-stage venture fund";

- And on *pages 6 and 7*, **Gina Domanig** of **Emerald Technology Ventures** (not an angel but a VC fund), offers some valuable advice on getting funded;
- On *pages 8 to 13* we hear it straight from the horses mouths: companies that have had to run the gauntlet of funding to get where they are today – two UK marine energy companies, **Pulse Tidal** and **Green Ocean**; **BNRG**, an Irish Solar company expanding in Eastern Europe, and **Solarpro**, a Bulgarian company;
- Next we shift perspective, and case study two of the indices that track clean energy activity – *see pages 14 to 17*;
- And finally, on *pages 18 to 20* we present a view on Intellectual Property in the clean technology sector, and how it can be used to influence a company's development.

Changing the game through angel financing –

by Susan Preston, General Partner,
CalCEF Clean Energy Angel Fund

Anyone living in Silicon Valley, among start-ups-turned-market leaders, knows the collective credo: today's unknown innovator has the potential to be tomorrow's global leader. And while the best innovations should rise to the top, market forces also play a critical role. We cannot separate the heavy hand of financial mechanisms in the development life-cycle of a technology, as it moves from lab to marketplace.

In the field of clean technology, this need for rising star innovators is particularly clear. Our energy infrastructure is the product of more than 100 years of heavily regulated government programs and geared toward our earlier, industrial markets.

Much of our existing structure has not been re-engineered in almost a century. Our energy system has remained vastly unchanged, despite increased demand on the grid and stark evidence of capacity overload through brown outs and black outs.

In the space of just the past few years, the clean energy imperative has gone from an issue for advocates, to an agenda for policymakers and, now, to an unprecedented opportunity for investors, with energy as the world's biggest business.

It's clear- we need to go beyond just improving on our current systems, in many ways, we need to re-invent the wheel of our energy economy.

Are the pioneers getting the arrows?

Historically, it has been in venture capital investors' best interest to bet on those innovations that lead to large, transformative and calculated game-changing technologies. However, in our current venture landscape, which can be characterised as risk-averse and favouring investment in proven, late-stage technologies, we are lacking a robust financing market at a critical stage of a company's development – when they are first starting out.

> "…we are lacking a robust financing market at a critical stage of a company's development – when they are first starting out"
> *– Susan Preston, CalCEF Clean Energy Angel Fund*

This imbalance is particularly acute in the nascent and capital-intensive industry of clean energy. According to a recent report from **Cleantech Group**/**Deloitte**, "cleantech", as an investment category, is now the largest sector receiving venture capital investments at 27% in Q2 2009.

While these funds and large rounds of financing are creating unprecedented opportunities for clean energy companies, unfortunately, only 5% to 7% of the investments are going towards companies in their early stages of growth, typically defined as "pre-revenue".

Susan Preston, General Partner, CalCEF Clean Energy Angel Fund

The vast majority of venture capital goes into expansion and late stages of company growth, well after initial revenue, establishment of market presence and shortly before a likely exit. This trend toward safer investments with proven technologies is demonstrated in a recent report published by **Ernst & Young**. Based on data calculated from **Dow Jones VentureSource**, in the first nine months of 2009, 62% of capital invested in cleantech went to companies already shipping products, compared to 37% during the same period in 2008.

Until recently, no angel organisation has focused entirely on providing much-needed seed and early stage financing to clean energy companies. Angel investors are traditionally associated with financing at this level, compared to VCs who focus primarily on expansion and later stage companies.

And this focus on more developed companies has led to a shortfall in investment capital for early stage companies, leaving many promising clean energy companies without access to funding and many investors without an investment vehicle.

New opportunity, new investment vehicle

We need to grow investments beyond the late stage, proven technologies. But what alternative investment strategies exist that will encourage sound and profitable investments in these game-changing "science experiments"?

Enter the relatively new vehicle of the seed-stage venture fund. These funds have less capital to deploy, and, therefore, can do smaller deals which match the financial needs of a young company. They are focused on the large and growing funding gap between the founder, friends and family (aka "love money"), and the larger venture funds, which are being pressured more by limited partners to do late stage, presumably low risk deals.

Seed funds, like the **CalCEF Clean Energy Angel Fund**, take a prospective investment through the same rigourous due diligence process as any other institutional investor. Relative risks are assessed. The team,

technology and market are extensively analysed. When an investment is selected, the seed stage investor has recognised clearly defined areas in which their expertise and contacts will help the young entrepreneur achieve certain critical milestones. The risk of failure is much higher, but the return potential is commensurately greater.

A few major VCs are beginning to see the light, as is clearly indicated by the recent announcement by super star investor **Vinod Khosla** of the closing of his own US$250M seed-stage investment fund. Funds such as Khosla's insist that venture capitalists, many of whom transitioned to cleantech from biotech or IT, should not be financing large-scale projects, but instead focusing on nurturing new companies.

Moving forward

The absence of the necessary financial support is a significant impediment to driving new generation technologies forward, and is consistently identified by thought leaders as a major gap in the financial architecture of clean energy.

The absence is not surprising though, and, as discussed, new financial mechanisms must be created in order to support the development of clean energy technologies from concept to commercialisation.

CalCEF's investment programmes for example seek to provide a new style of investment intelligence – one that is deeply attuned to – and supportive of – both the public policy process and the life-cycles of new technology development.

The clean energy transition cannot succeed without guidance and support from policy. This guidance and support creates an opportunity for meaningful public-private partnerships, and entrepreneurs and financiers that understand these partnerships are best positioned to succeed in the clean energy transition.

Gina Domanig, Managing Partner, Emerald Technology Ventures

Searching for the needle in the haystack –

by Gina Domanig, Managing Partner,
Emerald Technology Ventures

Cleantech is a much more exciting space today than it was 10 years ago when Emerald started. We see Governments vying for the spotlight as climate change champions introduce attractive incentives to boost clean-tech demand and create "green jobs" in the process.

> "despite the optimism from the market and investors, finding the great cleantech deals is still akin to searching for the needle in the haystack"
> *– Gina Domanig, Emerald Technology Ventures*

Despite the ongoing difficulties in securing project finance, you do see announcements of technology deployment in large scale on a daily basis. VC enthusiasm is high and investors are pronouncing their dedication to cleantech at every occasion.

However, despite the optimism from the market and investors, finding the great cleantech deals is still akin to searching for the needle in the haystack.

Currently we receive about 1,000 cleantech business plans per annum. If one applied the old standard of 1%, we would be doing ten deals a year – well above our average.

What makes it so challenging?

As experienced investors we have "sonar" that attracts us to specific investment opportunities. But like any VC sector, cleantech deals come with hairs on them. We have to ask ourselves: "Which and how many hairs are still acceptable?" Taking each of our key buying factors, one can see where there is flexibility and where there is none.

- **Outstanding management** – Cleantech is attracting more seasoned managers and entrepreneurs than in the past, but there is still a long path ahead. Often the founder team is stacked with outstanding technology gurus but lacks market and management experience. Beyond the IP, we need a team that properly understands the true market potential, can overcome the challenges to penetrate the market, position themselves to capture value within the value chain, and create business models to accelerate revenue growth with capital efficiency. Unfortunately, time is not on our side so the team must hit the ground running. Management is not an area to make compromises;

- **Strong market pull –** The great thing about cleantech is that it typically addresses very large existing markets. The flip side is that there are very large existing players who have been doing the same thing for years. Unless they feel some pain, changing the behavior of industrial giants is going to be a challenge. We like markets which are under pressure

and must adopt new technologies to survive and thrive. We have to get the timing right as being too early can be costly and painful – thus "the bleeding edge" saying. If we really believe a market is emerging, we may consider putting a small amount of capital in a company if it is at the beginning of the investment period (i.e. we have more time to realise the investment) and we believe the investment could be a real home run;

- **Clear value proposition –** or cheaper, better, faster. Purchasing decisions work the same in cleantech as they do in other established industries. Smart young companies have to bring something to the market which is going to either substantially improve the customers' performance or substantially reduce his costs and preferably both. Marginal improvements are not what we are looking for – no compromises here.

Investors like to do meticulous due diligence. Similarly, entrepreneurs should do meticulous due diligence as well. Entrepreneurs have to accept that VC investors, in particular, are very hands on. We play an active role with our companies – we roll up our sleeves. The chemistry between the investor and the entrepreneur needs to be nothing short of spectacular. Difficult situations are inevitable and the only way to navigate through them is with trust and teamwork.

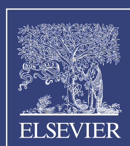
So what pointers do we give entrepreneurs when they are looking at a variety of cleantech investors?

- **Contribution –** a VC fund is represented by its partners. While the partner team has honed its sonar for investing in high return companies, the partners have different styles and personalities. Since chemistry between the partner and entrepreneur is critical, the entrepreneur needs to spend time getting to know the new partner. The entrepreneur needs to reach out to the CEOs that work with the partner to get a better sense of his/her contribution, personality and pitfalls. Based on my experience, portfolio company CEOs are happy to speak to soon-to-be fellow portfolio companies;

- **Industry expertise –** Generalist funds are simply not the same as dedicated cleantech funds. Operating experience in the energy and water sectors is an imperative when investing in cleantech, as adoption of new solutions is slow, executive level networks are key and capital requirements vary significantly. Investors that have experienced firsthand the difficulties of selling into industrial giants are highly valuable to the cleantech CEO. VC funds that do not have a partner base that understand the complexities of the industry will struggle to help companies grow. There is clearly no substitute for 10-mile deep sector experts;

- **Track record –** Similar to industry experience, the track record of a VC fund provides proof that the investors understand the sector and know how to invest properly. If a VC fund has a portfolio of diverse cleantech companies in various stages of development, that is usually a sign that they are sophisticated, knowledgeable and, most importantly, good at what they do.

The message here is that the relationship between the entrepreneur and the VC investor goes two ways. We are both looking for perfection and, though both of us know this does not exist, if the chemistry and meticulousness of the evaluation point in a positive direction, success is inevitable.

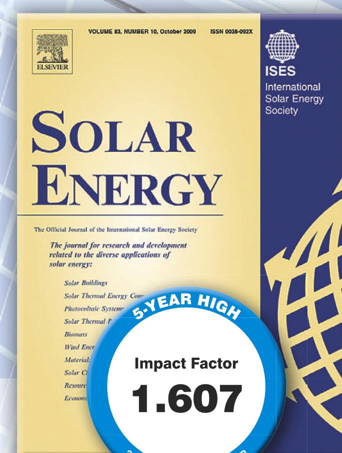


SOLAR ENERGY

The Official Journal of the International Solar Energy Society®

ISES
International
Solar Energy
Society

- devoted exclusively to the science and technology of solar energy applications.
- publishes articles on all aspects of solar energy research, development, application, measurement and policy.
- accepts reports of original studies or reviews of significant prior work.



12 Issues per year

energylocate
CONNECTING ENERGY EXPERTS
www. energylocate.com

www.elsevier.com/locate/solener

Impact Factor data © Journal Citation Reports 2009 published by Thomson Reuters