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#### Trends in Cleantech Investing

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“Cleantech” has become a buzzword for venture capitalists over the past few years. In fact, many if not most venture capital and private equity firms have decided to devote considerable time and resources to this burgeoning industry. While often the subject of heated debate among experts, entrepreneurs and journalists, the meaning of the term “Cleantech” and the scope of the industry remain somewhat unclear to many of us. Cleantech, which is often viewed as synonymous with sustainability, can be defined as “technologies that harness renewable materials and energy sources, dramatically reduce the use of natural resources, and significantly cut or eliminate emissions and wastes.”

This article seeks to shed some light on some of the key attributes of the Cleantech industry from a venture capitalist’s perspective. There are a number of important aspects of Cleantech investing which are not obvious to those who have not been involved with this field for a significant period of time – which, due to the nascent nature of the industry, includes most of those interested in Cleantech. Importantly, there are significant differences between the Cleantech industry and other industries with which venture capitalists may be familiar, such as information technology (IT) and life sciences. Understanding these differences and Cleantech industry trends generally is critical to entering and succeeding in this field.

1) *Broad field; narrow sub-sectors.* As is clear from the definition above, Cleantech is a multi-disciplinary field which encompasses a broad range of business ideas and technologies, from renewable energy to applied materials, carbon sequestration to desalination. This presents a conundrum for venture capitalists: having a focus that is broad enough to be able to evolve with industry trends and provide exposure to successful, often as-yet-undetermined technologies, yet narrow enough to allow responsible partners to be knowledgeable about the underlying science, technology or process and have the experience necessary to separate the proverbial wheat from the chaff. Even more important than in the IT sector, it becomes imperative for each partner to focus on just a few key sub-sectors and not try to be an expert in everything. Similarly, it is crucial to understand where a potential portfolio company fits within Cleantech spectrum. Having more than one partner dedicated to the field, with defined, yet flexible, areas of responsibility can be helpful in this regard.

2) *Understanding the underlying science.* Much of Cleantech involves new technologies and recently-discovered science. In this respect, the field is quite similar to some of the biotechnology sub-sectors; for example, stem cell technology and medical devices. The strong underpinning of cutting-edge science upon which much of the Cleantech industry is based makes it critical for Cleantech-focused venture capitalists to genuinely understand the science behind the technology of potential portfolio companies. Generally, participants either need to have science degrees themselves, or else rely on outside experts, including lawyers and accountants, who do. A strong, focused scientific advisory board with experts in some of the key technologies can provide an excellent backstop in the deal sourcing and due diligence processes.

3) *Intellectual property is extremely important.* While IP is almost always an important issue with any type of venture-backed company, it is especially important with Cleantech companies. Since most of the sub-sectors in the field involve very new technologies, there is a strong emphasis on being the first to develop a new, potentially lucrative product or technology. In many cases, the innovation process runs ahead of the patenting process. Accordingly, venture capitalists should pay careful attention to the state of a potential portfolio company's IP. In particular, and in common with many biotechnology companies, licensing and freedom to operate (i.e., defensive intellectual property protection) can often be key considerations.

4) *Relatively inexperienced base of entrepreneurs.* Historically, much of Cleantech investment has come from universities and the public sector, such as the U.S. Department of Energy. The resources, utility and waste management industries have been responsible for a considerable portion of the remaining investment in the industry, often on a cost-center basis. As a result, compared to other industries such as IT and life sciences, there is not a large base of entrepreneurs who have experience developing and commercializing technology-based products. At present, much of the industry's senior management pool has been based on experienced managers moving laterally from other industries, as well as scientists and managers coming out of the university or other institutional settings. While this will be less of an issue as the Cleantech industry evolves, at present venture capitalists need to take great care to ensure that, notwithstanding that a potential portfolio company has a product with significant commercial potential, the company will actually be able to put together a team with sufficient skills and depth to implement a business plan for the product. This is another area where a seasoned, appropriately focused advisory board can be crucial.

5) *Rapid response.* Because Cleantech has developed so quickly, and many of the technologies involved are quite new, there is a premium on being able to quickly identify and execute investment opportunities. Cleantech is a hot area, and accordingly potential portfolio companies often enjoy significantly higher valuations than may be the case in other industries. Accordingly, venture capital firms should seek a balance between performing thorough due diligence, while remaining nimble enough to move quickly on deals. Confidentiality agreements and no-shop clauses can be particularly helpful, and contentious, when viewed against this background.

6) *Different geographic scope.* Unlike with IT and life sciences, to date, the bulk of the most significant developments in the Cleantech industry have occurred outside the United States. For example, Europe has seen considerable innovation in the field, in part due to higher population densities, more constrained resources and higher energy costs. Even within the United States, Cleantech has involved a much broader geographic scope than many other technology-related industries.

7) *Less dependence on venture capital.* Many Cleantech companies will not be looking toward venture capital as their primary source of equity financing. The history of the industry, at least outside the public and institutional sectors, has involved heavy investment by resources, utility and waste management companies, which are often *Fortune 500* companies. In part, this has been driven by the often large amounts of financing required to bring new technologies to market. Venture capitalists should be cognizant that many Cleantech companies have multiple potential sources of financing when evaluating investment opportunities.

8) *Large follow-on deals.* As a direct result of the high costs needed to commercialize a product, Cleantech companies often look to later financing rounds for the bulk of their financing needs. Also, Cleantech companies often achieve milestones in incremental steps, as opposed to gradually over time. As so-called "pay to play" rights are common for early round investors, venture capitalists should be sure to maintain a fair amount of capital deployment capacity for these later financing rounds or else risk being diluted significantly in the later rounds.

9) *The double bottom line.* Although also present in some other industries, many investors in Cleantech companies are looking at two bottom lines: financial profitability and social or environmental benefits produced by the company and its products. This may be consistent with those venture capital investors who are already following a "double bottom line" investment strategy, whether formally or informally. However, it can also create problems. Ultimately, most limited partners in venture capital funds focus on financial return on investment and multiples, and the social benefits of an investment are at best a secondary consideration. In addition, while many institutional limited partners have special allocations for socially-responsible investment opportunities, this typically falls into a different category than their venture capital fund investments. Arguably, the double bottom line approach is a bit of a red herring anyways, as the companies that do the best job at solving sustainability issues will often be the most profitable in the long run.

10) *Macroeconomics, politics and taxes.* Historically, a lot of Cleantech investment has been based on taking advantage of tax benefits or political considerations. Also, macroeconomic factors, for example the price of oil, can have a significant impact on valuations and the potential success of a Cleantech company's products. Accordingly, venture capital investors need to pay more attention to these external factors than is often the case with investments in other industries. Staying abreast of news developments, governmental policy changes, tax policy, etc. can be crucial to success.