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Carbon Value in Cleantech: Critical for Valuation, Revenue and Partnerships

The appetite of the venture capital community for Cleantech investment is large and growing, totaling more than $5.1 billion in 2007 and approximately $1.25 billion for the first quarter of 2008. Climate change represents one of the primary drivers for this investment Today, scientists have effectively convinced investors, companies and consumers of the urgent need to reduce greenhouse gas emissions. Therefore, U.S. regulation is inevitable and, in the case of California, on a time-line already established by AB32 (the greenhouse gas legislation passed in 2006 which requires reductions in emissions to 1990 levels by 2020). While the scope and content of such regulation remains unclear, carbon reduction will certainly have value. And every private (and public) company will be affected, with disproportionate impact on those in the Cleantech space.

Why Is Carbon Reduction Value Important Now?

Venture investors must understand the value in carbon reduction for at least three reasons.

1. **Value through Ownership.** As Cleantech companies drive revenues through sales of products and solutions and expand through partnerships and strategic relationships, it is critical to clearly articulate the ownership of carbon value. Companies can either retain ownership or include the same in the prices of products sold. This lesson has already been learned — the hard way — with respect to renewable energy credits (RECs). In 2006, California passed legislation which provided that unless a renewable energy provider had addressed ownership in its pre-2005 contracts, REC benefits were assumed to have been already sold to purchasers.

2. **Value through Sales.** Valuations of Cleantech companies will be impacted by the carbon market and the value of carbon reduction strategies — in current and future financings and in connection with mergers, acquisitions, and initial public offerings. Valuations will reflect increased revenues from sales of energy efficient and carbon reducing products and technology. There will also be increased competition among investors for companies that offer these solutions, not only from the venture capitalcommunity but also from private equity, the established energy sector, and the Fortune 1000.

3. **Value through Trading.** As a robust trading market emerges in the U.S. to match or surpass the European model, carbon reduction will have value that may be captured through revenues from sales of allowances or credits. The first step to understanding carbon reduction value is understanding the regulatory framework from which the value will derive.

Understanding the Regulatory Framework

Estimates on the potential for a global carbon market are startling. Analysts at Point Carbon, a research firm based in Europe, have reported that in 2007 the global market for buying and selling carbon emissions — a market that primarily involves purchasing the right to emit greenhouse gases by industries in European countries that are required to reduce emissions under the Kyoto Protocol, and currently covers only a small fraction of total global emissions — reached $60 billion. That total represents an 80 percent increase from 2006. Looking forward a decade, New Energy Finance, another research firm, anticipates a U.S. carbontrading market totaling $1 trillion by the year 2020, more than seven percent of the current U.S. GDP.

With billions of dollars already at stake, and perhaps trillions on the horizon, the carbon markets have been crying out for a common set of rules from the politicians and regulators, but progress has been slow so far. Even after the scientific community concluded in

1979 that a "wait and see" approach to addressing human induced climate-change impacts was ill-advised, countries waited nearly 20 years before agreeing to the Kyoto Protocol (and then waited another eight years before the Protocol entered into force). To date, the United States is still waiting — having declined to join Kyoto despite considerable global pressures.

Thus, it is a safe assumption that there will be no quick resolution on a global, or even U.S., cap-and-trade system. The fundamental policy issues in play for the looming carbon market, such as whether to limit cap-and-trade programs only to certain industry sectors, whether to auction or allocate the ability to emit greenhouse gases in those programs, whether to implement price ceilings or floors on the markets, and whether to allow for linkage between separate cap-and-trade regimes (such as between the existing emission trading system in Europe with new systems in the United States), resist swift political action. At the same time, a massive economic force is building behind the Cleantech industry and climate change movement — a force that is destined to evolve into a full-blown commodity market at a scale that could influence the entire global economy.

Because establishing rules for a carbon market is, in essence, inventing an entirely new commodity, the decisions on regulation will not be made quickly — the potential shock to future economic activity that may result is simply too daunting for unconsidered action. But, as the regulation occurs, and policy interpretations emerge, any organization or institution with an impact on the environment — business, nonprofit, government, or academic — is well advised to investigate its carbon emissions and potential for reductions, and then examine the options for tapping any reduction value.

Evaluating Your Carbon Reduction Value

While greenhouse gas reductions already have value, defining that value is difficult. Activities within the Kyoto regulated boundaries (either Annex I countries or Clean Development Mechanism nations) may have a slightly better ability to iden tify how much the reduction of one ton of carbon dioxide is worth by looking at the current prices in existing markets — but even those prices can change dramatically by the time a reduction is actually achieved. In less than a month in 2006, the price of carbon in the European Union Emission Trading Scheme plummeted approximately 70 percent, when participants in the market suddenly discovered that allowances had been over allocated and the regulated entities would easily meet their targets. One can only imagine the impacts of such an event had a robust global carbon market been in place. Early speculators in the existing markets have been on a roller-coaster, watching their stocks and company values rise and fall (reported on the front page of the Wall Street Journal to be as much as 80 percent swings). Going forward, this volatility will be influenced by the increasing volume of carbon credits, the price differences by geographic markets, the type and variety of carbon mitigation projects, and the evolving regulatory and market frameworks

Nevertheless, anticipating the potential boom in carbon market activity and the consequences of inaction, companies are devoting unprecedented efforts to measure emissions, and price and trade their reduction. These reductions are often referred to as "offsets" — reductions that are measured, verified, and sold to enable the purchaser to subtract the equivalent emissions from its overall emission balance. Offsets typically come in one of two forms — the capture of carbon from the atmosphere, such as through planting and protecting a forest, or the prevention of emissions that would otherwise be released into the atmosphere, such as by trapping waste gas from a fossil fuel power plant and using that gas for an alternative fuel or product.

To evaluate potential carbon reduction values, companies and investors must assess the existing regulatory landscape for emission control in the geographic areas where they conduct business, and also identify the potential regulatory developments that may be relevant to them. Measurement is a critical emerging need, both to understand the quantifiable value that exists, and for potential disclosure to investors and regulators.

Protecting Your Carbon Value

Given the increasing importance placed on carbon reduction value, what steps should all companies, and particularly those in the Cleantech space, take to preserve and enhance such value?

1. **Take action now.** As described above, the regulatory environment in the U.S. is still far from clear. But it is really a question of when not if. Therefore, waiting for such regulation to start measuring and protecting carbon reduction value will prove to be a big mistake

2. **Hire an expert to measure carbon reduction.** There are consultants (such as Climate Wedge and BSR, to name two) who can measure the carbon reducing impact of products and technology solutions. For a cost comparable to hiring a 409A specialist to evaluate stock options, we would advise every Cleantech company to retain a firm to measure and report on the "carbon footprint" of such company's products or technology. This will be critical in establishing prices that incorporate the carbon value and in determining ownership. It will also be part-and-parcel of an effective marketing strategy.

3. **Specify ownership in all contracts.** As noted in the example of renewable energy credits above, California legislation has made it clear that ownership and value not clearly preserved by contract can be lost forever. Therefore, advise your Cleantech companies to make provision for ownership of carbon credits and allowances in sales contracts, licenses, joint ventures and strategic alliances. A place holder for carbon ownership should also be considered in contracts resulting in a change of control, whether through merger, sale of stock, or sale of assets.

4. **Provide for adjustment and increase in carbon valuations.** In negotiating agreements with purchasers and licensees, it will also be important to allow for future adjustments to prices or license fees if the value of a product or solution increases with the prices of credits or allowances. The same is true for partners in joint ventures and strategic relationships, and for earn-out payments in mergers and acquisitions.

5. **Understand and track the regulatory environment.** If climate change is a primary driver of Cleantech investment, then the regulatory framework is the steering wheel. In the absence of clear regulation, but with the expectation that it is coming, the markets are not yet operating at their fullest potential. To best prepare for when those regulatory decisions are made, venture capitalists and entrepreneurs alike must keep a very close eye on (a) the implementation of AB32 in California, (b) the development of three primary regional frameworks — the Western Climate Initiative, the Midwestern Regional Greenhouse Gas Reduction Accord, and the Regional Greenhouse Gas Initiative, and (c) the revisions to climate change bills currently being considered in Congress — most notably the Lieberman-Warner Climate Security Act (S.2191). Regulation will provide the foundation on which the carbon markets grow, and will ultimately influence both the metrics for measurement of emissions and the valuation associated with emission reductions.

The carbon-reduction opportunities are emerging fast, and venture investors and entrepreneurs who take action early will benefit the most from these opportunities in new markets, breakthrough products, smarter valuations, and managed risks. With a potential trillion-dollar commodity-like market for trading carbon, and its role as a strategic element of your portfolio, leading investors are wise to begin evaluating, acting, and positioning themselves now.

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