Bradley, Foster & Sargent, Inc.
Quarterly Market Commentary

January 2007

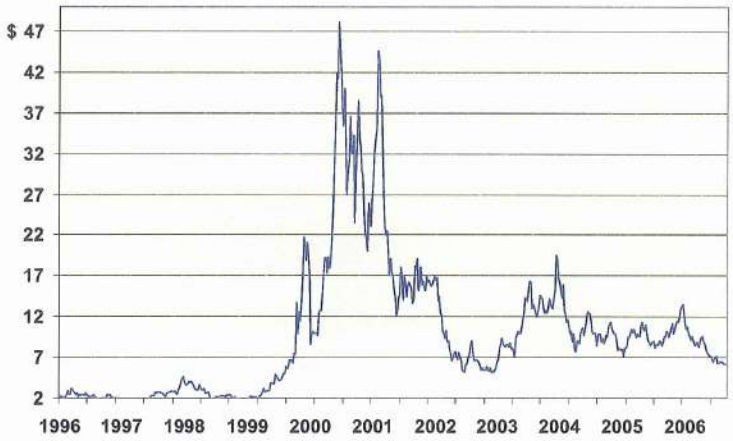
Time to Invest in Alternative Energy Stocks?

"Here we have a serious problem: America is addicted to oil,
which is often imported from unstable parts of the world."

President George W. Bush, State of the Union Address, January 31, 2006

For more than a decade, investors have sought ways to make money by investing in alternative energy stocks. Some investors have bought these stocks primarily based on environmental concerns. Others have purchased alternative energy securities because they wanted to participate in the early stages of an industry with enormous growth potential. And many investors have used these stocks as pure speculation plays, trying to profit from their powerful upward momentum during the California "brown-outs" of 1999 and 2000. But whatever the motivation, most investors have lost money owning these stocks because of their huge volatility and the absence of earnings to provide a foundation of value when energy prices drop. A good example of the price performance of an alternative energy stock over the past decade is the Connecticut-based firm shown below:

FuelCell Energy, Inc.



Source: StockVal

But has the situation changed? Is now the right time to invest in selected, high quality alternative energy stocks? At Bradley, Foster & Sargent, Inc. we believe that the times are indeed changing, but investors still need to be very careful about investing in this sector.

Political Change in the U.S.

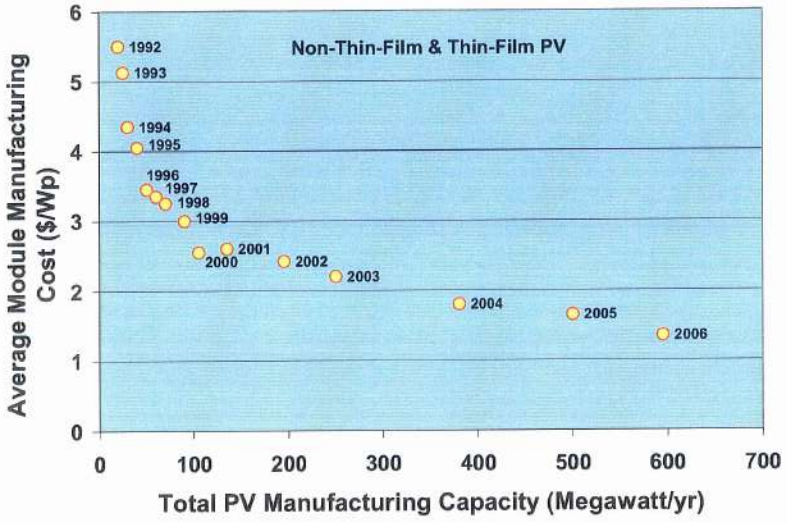
A major political change has taken place in the United States. For the first time in decades, the political left and the political right have an energy agenda with much in common. Based on environmental concerns, the political left has an energy agenda which seeks larger subsidies and tax credits for alternative energy producers and more funds for research to develop more cost effective technology for energy produced from wind, solar, fuel cell, ethanol and other agriculturally based products. Based upon geopolitical concerns, the political right wants to cut back the funds going into the coffers of some Middle Eastern countries which support terrorism against the U.S. and western civilization (or which spread

radical Islam globally). As President Bush laid out in his 2006 State of the Union address, his administration wants to increase significantly the amount of energy produced from sources in North America including solar, wind and fuel cells (hydrogen). President Bush established a goal of reducing Middle East imports by 75% by 2025. Many states have begun to follow the same policies, enacting larger subsidies for hybrid and electric cars as well as energy produced from wind, sun, hydrogen and agriculture. While there are still major party differences over nuclear energy and drilling in Alaska or off-shore, Republicans and Democrats are making common cause on a range of alternative energy products that most observers would have scarcely believed possible just a few years ago. What does this mean for investors? It means that there will be more and larger federal and state tax credits and subsidies for alternative energy as well as stepped-up funds for research for this industry.

Global Supply and Demand Factors

According to some experts, more energy will be consumed over the next 60 years than in all recorded history, and traditional fossil fuels are not going to meet the increased demand. Currently, global demand for oil is approximately 88 million barrels a day, and as the great engines of global economic growth, China and India, ramp up their economies, significantly larger energy demands will accompany their dramatic increase in GDP growth. While there are ample global supplies of oil and gas for decades to come, it is becoming much more costly to recover these deposits. Thus, increased demand for energy combined with higher costs to produce it will inexorably drive up fossil fuel energy prices. While the U.S. and other countries have enormous coal deposits, environmental concerns continue to limit the increased use of coal to provide energy. Nuclear energy is another potential solution, but critics point to safety and waste-storage issues. At the same time as these factors combine to drive up the cost of the production and consumption of energy, the cost of some alternative energy products is decreasing. The chart below shows the decrease in the cost of producing photovoltaic (solar) modules over the past decade and a half:

PV Manufacturing Cost/Capacity



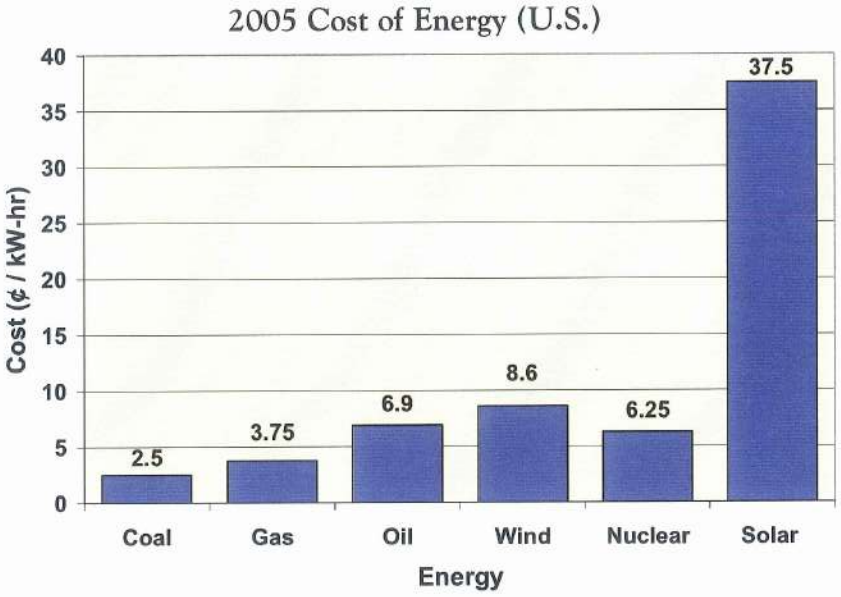
Source: U.S. Department of Energy

This chart shows that total module production capacity in the photovoltaic industry in the U.S. grew from 13 megawatts in 1992 to almost 600 megawatts in 2006. With the enormous increase in capacity, the direct costs of manufacturing a module dropped from $5.47 per peak watt in 1992 to less than $1.50 in 2006. By 2011, the cost per watt is projected to drop to $1 or less. With each doubling of manufacturing capacity, the direct manufacturing costs reflect an average 18% drop in the cost of production. This

resembles the same power curve that occurred in the manufacture of semiconductor chips between 1970 and 2000.

Energy Costs in the United States

"Alternative energy stocks" is a catchall phrase that encompasses a number of industries and a wide variety of companies. Each industry sector – wind, solar, hydrogen (fuel cell), and biofuel – has its own dynamics and requires separate analysis. It is not possible to analyze thoroughly even one of these sectors, much less all of them, in this short report. However, the cost dynamics of producing energy in the U.S. can be clearly portrayed in the chart below:



Source: U.S. Department of Energy

As shown above, solar energy is one of the most expensive sources of energy, being 5-10 times more expensive than conventional fossil fuel electricity. In addition, the fast growth of the solar industry has driven up the price of silicon, the raw material from which photovoltaic cells are manufactured, causing even higher costs in the short run. Regardless of the negative cost differentials with fossil fuel electricity, Germany, Japan and Spain (among others) offer substantial subsidies and tax credits for solar power. These subsidies are so significant that solar energy is growing dramatically in these countries. The recent political convergence in the U.S. on energy matters has led to growing subsidies in various states such as California, and solar energy is beginning to ramp up across the country as well. The dramatic increase in manufacturing capacity and the steady advances in technology that reduce the amount of silicon necessary to make a PV cell are projected to make solar energy competitive with fossil fuel electricity without subsidies within 5-10 years. Solar energy is now a $15 billion a year industry worldwide and is estimated to be growing by 35% annually, according to a recent Needham & Company analysis.

Wind Power, Fuel Cells, and Biofuels

There also appears to be an excellent future in energy production from wind power. The actual cost of producing electricity from wind power depends upon the strength and reliability of the wind power as well as the size of the turbines. Selected commercial wind farms in the U.S. already produce electricity for the grid profitably without federal or state subsidies. Unfortunately, investors are hard pressed to find ways to play this sector profitably. Several excellent companies such as GE and AES have invested aggressively in this area, but operating income from wind power represents such a small fraction of total income that even rapid and

accelerating growth will not move the prices of these stocks very much. Several large European companies manufacture wind turbines – Vestas in Denmark and Gamesa in Spain – but their stocks trade like cyclical companies rather than secular growth plays.

It will take many years for fuel cell companies to overcome the huge challenges which face them in order to reach profitability. Direct investments in the fuel cell industry represent pure speculation at this time. However, diversified United Technologies includes the International Fuel Cell division which offers some exposure to this embryonic industry. The biofuel industry is already well established and profitable. Investors have recognized the enormous growth potential of the biofuel industry and have also bid up the price of Monsanto (and to some extent DuPont), firms capitalizing on the ethanol market.

Pros and Cons of Investing in Solar Stocks

As delineated below, there are important contrary factors to take into consideration along with the many positives when considering an investment in this industry:

Pros	Cons
Excellent energy supply/demand equation	Solar power costs 10 times conventional electricity
Positive environmental and political trends	Without subsidies, solar power firms lose money
Rapid decrease in unit production costs	Shortage of silicon drives up cost of solar PVCs
Huge market with great potential growth	Lower oil/gas prices make solar less attractive
Increasing government subsidies globally	Solar stocks: high correlation with energy prices

Summary

The solar power industry is the one which currently offers the best risk/reward ratio. Yet an investment in solar stocks – even those with rapidly growing revenues and positive earnings – is still highly speculative. *This is because solar power companies with positive cash flow are making money only because of sizable tax credits and other subsidies in key consumer countries – Germany, Japan, Spain, and the U.S.* On the other hand, powerful macro-economic, environmental and political forces are causing very rapid growth in the industry, growth which is causing the manufacturing costs of solar cells to drop dramatically. As in the wind industry, a handful of large capitalization companies account for much of the solar power market share – Sharp, Kyocera, and BP. However, solar revenues and profits will not move the price of these stocks very much. Rather it is the small capitalization firms such as *Evergreen Solar, Sunpower, and Suntech* (a Chinese company) whose stock prices could increase significantly if current trends persist and the solar industry continues its dramatic growth rates.

An investor can gain some exposure to alternative energy through large cap diversified companies such as GE, AES, United Technologies and Monsanto. A more aggressive approach would be to consider purchasing several profitable and growing small cap companies. These firms need to have excellent technology, which will drive down the cost of manufacturing PV cells and the utilization of silicon. Long term supplier contracts of silicon are also critical. Finally, the time to buy these stocks is when oil and gas prices are low, providing a depressed entry price. Once the stock is owned, constant monitoring of the firm is critical. Conditions in this industry change rapidly, and today's winner can be in financial distress tomorrow. In summary, this is an industry with a future, and one which Bradley, Foster & Sargent will be following carefully in the years to come.

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