

The Arete Newsletter

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How Green is Your Machine?

Energy, Climate Change and Profits: the new convergence?

Green is definitely the new black. Businesses, cities, organizations are all scrambling to become “green” leaders. Businesses from Home Depot, Wal-Mart, BP, and Hewlett Packard to family-owned farming businesses to start up high tech ventures are embracing the green agenda. Consumers are following suit (or sometimes leading). Conservation and eco-friendly actions are no longer the sole province of fringe environmental groups and the so-called “tree huggers.” The financial community, including investment bankers, venture capitalists and private equity players are also getting into the act. So, is this a fad or is the green trend here to stay? There are strong indications that going green is likely to become more and more a regulatory and legal requirement; notwithstanding, it is also the right thing to do, and importantly, it can be the profitable thing to do.



The “Perfect Storm” is green

Eco-activism is not new and neither is funding of alternative energy research. How did the green movement become so mainstream? A number of factors have come together over the last several years to create an environment that suggests that the clean technology and green movement will be lasting and indeed will soon, if not already, will be seen no longer as a movement but part of the very fabric of our economy.

Just like the coming together of several different weather systems to form a single massive storm front, a number of events have drawn together governments, consumers, interest groups and businesses, all with different agenda, into a single massive social and economic “perfect storm.” Think about a few of the events we have seen:

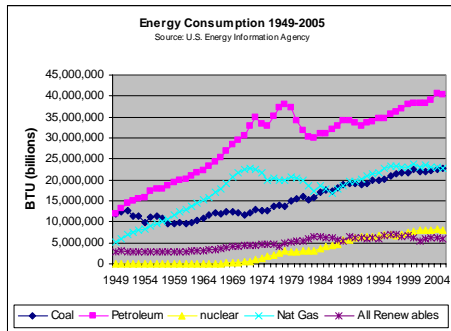
- sustained oil price hikes
- ongoing Middle East conflicts and linking of global terrorism
- tangible evidence of global warming and prospective climate change impacts
- government and regulatory action moving toward stronger limits on pollutants and greenhouse gas emissions
- rapid industrialization of China and India, the two largest populations in the world, and other developing countries and their resistance to any limitations on industrial pollution
- growing awareness of the environmental issues and a fast-growing willingness of consumers to support and even pay more for cleaner and more sustainable business activity

This confluence of connected yet disparate events have come together at the same time to create a combined societal energy that feeds on each of the elements like a storm system drawing energy from

the overheated ocean waters. When this “storm” is over, we are likely to see the impacts as lasting, forever changing business and governmental landscapes driven by the new realities and priorities.

Oil and coal are black; is green the new color of energy?

While renewable, green or clean energy sources such as solar, wind, geo-thermal and biomass have been used by man for thousands of years (e.g. modern day windmills were first introduced into European society in the 12th century), since the 1950's world-wide consumption of petroleum has



outpaced all other sources. Renewables were seen as less energy efficient and moreover, crude oil was readily available at a comparatively low cost. But Middle East conflict and OPEC's exercise of its monopoly power has, as it did in the mid 1970's, once again focused the oil consumer countries on their growing dependency of a foreign-controlled commodity. Since September 11, 2001, crude oil prices have risen from a low of roughly \$25 (inflation adjusted) per barrel to over \$70 per barrel. Two-thirds of the world's proven oil reserves lie in the conflict-ridden, politically unstable Middle East. There

is a growing understanding that the true cost of oil as an energy source must take into account:

- the billions of dollars that are spent directly on war efforts and indirectly for financial and military aid provided to “friendly” or pro-Western Middle East countries, primarily to protect the country's oil supply. Consider that the U.S. has deployed permanent naval fleets in the Mediterranean and the Persian Gulf and then ask yourself whether the U. S. would have sent 500,000 troops to free Kuwait in 1991 if there were no oil fields?
- the cost of Western U.S., economic vulnerability to regimes such as Russia and Venezuela that use energy as a part of their foreign policy,
- the cost to the environment from polluting internal combustion engines and the cost to the consumer for “cleaning technologies” such as the catalytic converter required in all cars, and
- the cost in human and economic terms of the global conflict against terrorism, and that certain terrorists groups have now linked their activities in part to the US military presence in the Middle East, particularly Iraq.

Add it all up to arrive at the true cost of oil, and it becomes understandable why even the oil companies are plowing significant dollars into renewable energy research. The economics of alternative fuels and renewable energy as compared to “cheap oil” change dramatically.

Concern over climate change and global warming has also significantly influenced the development and focus on renewable energy sources. Putting aside the hyperbolic arguments that have polemicized the climate change debate, there is no doubt that national and local governments, businesses and consumers are beginning to take strong steps to address the reputed man-made causes of global warming and climate change. These actions point toward a marked “greening” of the developed world, with a greater focus on energy conservation efforts, higher uses of renewable energy, and sustainable business practices.

Government and regulation, wielding the carrot and stick

Climate change has recently joined the short list of issues that drives the international political agenda. The United Nations Framework Convention on Climate Change and its Kyoto Protocol is the primary political framework for international action on climate change. Under Kyoto, signatory countries (which to date does not include the US) agreed to binding targets for reducing national levels of green-house gas emission. The recent G-8 conference held in Germany concluded with a non-binding communiqué in which it was announced that the G8 nations would “aim to at least halve global CO2 emissions by 2050.” In April of this year, the United Nations Security Council held its first-ever debate on the impact of climate change on security, based on a recognition that climate change could have a severe impact on global peace and collective security.

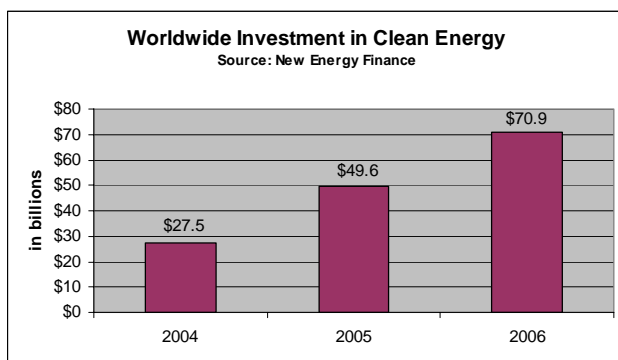
In Europe, a carbon tax on high energy users and emitters is all but a reality. But Europe has also established, similar to the scheme under the Kyoto Protocol, a carbon trading market that permits the trading of carbon credits generated by projects that reduce greenhouse gas emissions. While the US opposed the establishment of mandated national targets, there is no doubt that the U.S. federal government will be stepping into the fray shortly, if not for anything else, to assume control over the environmental agenda. Many states have demonstrated hearty support of emissions reductions since Kyoto. At least 28 states have climate action plans and 9 have committed to specific reductions of emissions. California, by itself one of the world's largest economies, have taken a leading role in these initiatives. The impact of these commitments will first be felt primarily on industries and companies with business in these states. Even more locally, over 300 mayors of US cities have embraced a challenge under the US Mayors' Climate Protection Agreement to push the Kyoto agenda. The rest of the developed world will be watching Washington to see how serious it is in its commitment to making a serious impact in reduction of greenhouse gases.

The momentum of the green lobby is increasing, due in part to the joining together of environmental groups with their traditional antagonists, corporate America. In one of the more recent initiatives, the Environmental Defense Fund and the National Resources Defense Fund, among others, have joined with companies such as Duke Energy, Alcoa, Dupont, Lehman Brothers and General Electric in the so-called *U.S. Climate Action Partnership* to lobby the US government to establish mandatory greenhouse gas emission reduction targets. Clearly these two groups are following their own agenda and for the corporate concerns, they have concluded that greenhouse gas emissions legislation is inevitable and it is in their best interests to proactively support limits to ensure they have influence over the drafting of the specific legislation and regulations.

Green is the color of money

Investors are flocking to clean energy technology and renewable energy companies. According to New Energy Finance, a London-based provider of research and analysis of clean and renewable energy markets, there are at least 1250 venture capital or private equity funds worldwide seeking investment opportunities (excluding project developers) in this sector. Globally, investment in clean energy reached \$70 billion in 2006.

Clean energy and green technology is the latest rage in Silicon Valley and other venture capital locations like Austin, Texas, shades of the frothy Internet era. In 2000, investments in green technologies represented only 1% of total venture capital funding in North America, according to the New York Times. By 2005, that number had risen to 10%. In 2006, \$2.4 billion in venture capital funds was invested in clean energy ventures. Noted venture capitalist have projected that clean energy technology will become the leading sector for new venture capital funding within five years.



Private equity is getting into the act as well. Goldman Sachs, Lehman Brothers and the Carlyle Group, among others, have raised significant funds targeted at clean energy investments. In the announcement about their \$45 billion takeover of Texas Utilities (TXU), the two giant private equity firms KKR and Texas Pacific Group touted the cancellation of eleven CO²-producing coal-firing electricity plants and the news media gushed about the environmental-

friendly nature of the acquisition. It likely that these savvy firms saw a double play profit opportunity in this aspect of the deal: cut back on growing the available power supply to maintain higher electricity prices, but also obtain the marketing benefits of being a green leader.

Going green is no longer the enemy of black

Green products and practices can indeed lead to profits. This has been demonstrated across industries, from the automotive and energy sectors, to the forest products and organic farming

industries. Green companies typically demonstrate corporate focus not only on environmentally friendly practices, but a more efficient workplace dedicated to driving out waste and unnecessary costs.

Profitability in the auto industry presents a good case study. According to the US Energy Information Administration, fossil fuel combustion accounted for 94 percent of CO² emissions in 2005, of which the transportation sector (translation: our trucks and cars) generated fully one-third of the total. The automotive industry, the single largest producer of carbon dioxide, has delivered hybrid vehicles, plug-in hybrids, fuel cells, and vehicles fueled by natural gas, biodiesel, and soon, hydrogen, all of which dramatically reduce CO₂ emissions. With gas prices over \$3 per gallon, vehicles with higher fuel efficiency or that rely on alternative fuels are more popular. Toyota Motors, with a reputation for technological innovation and leadership, has surpassed GM for the first time as the world's largest automotive maker. With its popular fuel-sipping Prius hybrid, Toyota has been generating significant profits, while GM and Ford, both of whom persisted in producing and marketing their gas-guzzling heavy trucks and SUVs, have experienced huge losses. Detroit has recently and perhaps reluctantly embraced the movement toward alternatives to internal combustion engines.

Energy efficient electronics and appliances are becoming more popular, although there is little evidence that consumers are choosing products on that factor alone. With the increasing emphasis on sustainability and energy independence, consumers are however becoming more educated (and concerned) about the rising costs of their home electrical uses and are opting to replace old or failing appliance with more efficient and environmentally-friendly units. Electronics manufacturers and stores have embraced low environmental impact and sustainability as strong marketing themes for their product lines. Wal-Mart and Home Depot have both launched marketing campaigns to promote eco-friendly products like CFC light bulbs. Interestingly, the growing corporate adoption of the green movement has worked to debunk some of the old arguments against the very movement; including that green energy, green products and environmentally-friendly business practices were too costly and would not be profitable. In fact, consumer demand (partly driven by the marketing focus) and resulting increased production output has allowed manufacturers to achieve economies of scale and bring more competitive pricing to the marketplace for the more energy efficient products.

Consumer demand, the imposition or prospect of regulations, and marketing considerations have led both global and local companies to adopt green practices in their own manufacturing and commercial infrastructure. As electricity and fuel costs continue to rise and become a larger percentage of overhead costs, corporate finance directors and operating officers are promoting greater use of efficient energy practices, including moving to hybrid and alternative fuel fleets, adopting energy conservation activities, reviewing corporate computing and data center power requirements, considering green building practices. We are seeing more companies expanding their use of recycled materials and adopting energy and environment best practices for their existing office and production facilities as well as new building requirements. Those energy conservation efforts that require cash outlays and capital expenditures often see short (1-3 years) payback periods due to significant cost savings realized.

Wrapping Up

The uptake of these developments is that the green is here to stay. Corporate enterprises will adopt "clean technology", environmental correctness and fuel efficiency, just to stay competitive, from a marketing and bottom line perspective. And so, we make the following recommendations to our clients:

1. Practice conservation efforts in-house. It is the little things, like changing out incandescent light-bulbs, shutting down all non-essential computers and other IT infrastructure at night and adopting recycling practices that can add up to significant cost savings. Review how you can improve profits by reducing wasteful practices. Adopt these practices as part of your corporate culture and send an important message as well to staff and management—that the company will contribute to environmentally-friendly practices.

2. Review auto and truck fleet requirements. Consider use and feasibility of alternative fuel vehicles when leases expire; do the math to determine whether by doing so the company can improve the bottom line by improving fuel economy. You will certainly reduce your greenhouse gas emissions.

(The U.S. uses approximately 420 million gallons of gasoline per day. For every million gallons of gasoline consumed by auto vehicles approximately 10,000 U.S. tons of carbon dioxide is released into the atmosphere.) Celebrate your conversion with your employees and your customers—even if improving your bottom line is the real reason for doing so.

3. *Consider energy requirements when reviewing a facilities move or expansion or upgrading your IT infrastructure.* Understand the costs, savings and long-term benefits of incorporating green building specifications and the use of alternative or renewable energy sources. Look to efficient Energy Star®-certified equipment and even better, have your IT staff consider server virtualization to significantly improve power consumption. If you choose this path, let others know – it is part of your corporate marketing as a good corporate citizen.

4. *Review whether your products and services can claim green credentials.* Whether you provide wholesale or retail products and services, service businesses or consumers, your green credentials can provide a tangible marketing boost. Appeal to your customers desire to reduce energy costs or impact on the environment, or both. Adopt service delivery practices that allow them to differentiate your company from the competition. There can be no doubting that people want to feel like they are doing the right thing—and improving their business or home.

5. *Review your supply chain for green credentials.* Take the next step and look to your suppliers and whether they are supporting low carbon footprint products and practices. Encourage suppliers to engage with new green initiatives. This will bolster your own credentials and lend credibility to your green marketing initiatives.

6. *Keep track of and document your initiatives, including resulting metrics on their business impact.* Yes, this can again support your marketing campaigns, but it will also support the company when seeking new capital, making acquisitions or implementing your exit strategy. These efforts will demonstrate corporate leadership and attention to details that will provide meaningful value in your discussions with prospective investors and partners.

Whether you are a start-up or a well-established enterprise, there is true value in taking on the green challenge. Do it now and stay ahead of the curve. Be a leader **before** the imposition of inevitable government regulation.



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