

U.S. Climate Change Policy Will Drive Significant Investment Opportunities in Traditional and Alternative Energy

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A new President and the likelihood of more Democrats in the House and Senate may tip the balance of power in energy debates from traditional oil and gas interests to proponents of new energy sources and cleantech goods and services. While we watch the election unfold, and as the rhetorical battles over energy policy continue in Washington, D.C., climate change legislation looms largest of all the energy debates.

As the United States gradually changes the complexion of its energy supply mix towards alternative and renewable sources and implements practices aimed at reducing overall energy demand, a number of sizeable investment opportunities currently exist for asset managers. More will arise in the future. This trend is partly market-based, as companies like GE, Wal-Mart and BP have demonstrated in response to demand from individual and commercial customers (and institutional investors).

However, market developments can carry the trend only so far. U.S. federal (and state) policies are a powerful force in nurturing markets and providing economic incentives for progress in this area. The largest driver of these opportunities over the next few years will be U.S. climate change policy. Given the scope of the climate issue, traditional and alternative energy companies – as well as many companies that have not historically thought of themselves as energy companies or concerned themselves with energy policy matters – are paying close attention. Alternative asset managers should too.

Recent Developments in Energy Investments

While tightening environmental restrictions (and risk guidelines issued by several major institutional lenders) have cast doubt on

the viability of investments in fossil-based (i.e. coal, oil, natural gas) energy generation and production, U.S. energy demand continues to rise. Accordingly, investments in traditional electric generation and vehicle fuels, energy exploration and distribution infrastructure (including petroleum exploration from oil sands and shale formations), new natural gas pipeline infrastructure and liquefied natural gas (LNG) import terminal development, are likely to continue.

In similar fashion, renewable energy generation (i.e., wind, solar, biomass, geothermal, landfill gas) and the current biodiesel and corn ethanol industries continue to experience growth. The U.S. renewable/alternative energy sector depends heavily on renewable energy production tax credits, R&D loan guarantees, direct appropriations and other incentives (for example, mandates that all government buildings use energy efficient lighting and power management technologies) to spur private investment opportunities. Many of these incentives were created or received a significant overhaul in the Energy Policy Act of 2005. The Energy Independence and Security Act of 2007 modified some of the incentives, and the balance of 2008 will see Congress further debate these incentives.

Climate Change Policy Will Drive Significant New Investment Opportunities

However, the current U.S. energy funding vehicles discussed above are just the tip of the iceberg in comparison to the market opportunities anticipated to arise from pending U.S. climate change legislation. Estimates of this market's size, not including emissions trading transactions or arbitrage opportunities, range from the tens of billions of dollars to well over 100 billion dollars

(for an overview of emissions markets, see January/February MFA Reporter article "Have Emissions Markets Arrived?"). What is the composition of this market, and where are the opportunities for alternative asset managers?

Necessary Research and Development to Commercialize New Energy Technologies

U.S. emissions of greenhouse gases are mostly (82%) comprised of the carbon dioxide (CO₂) released when fossil fuels (coal, oil, natural gas) are burned to create energy for electricity, transportation and heat. Reducing emissions of CO₂ will require advanced energy technologies, for not only the more efficient use of electric energy and fuels, but also the creation of electricity and fuels.

For the United States to substantially increase the penetration of advanced energy technologies (efficiency, renewables, coal, and nuclear for the electric sector and renewable fuels and more efficient vehicles for the transportation sector), more funding must be directed to the research, development and deployment (RD&D) needed to enable commercialization. A number of groups concerned with electricity and RD&D needs (such as the International Energy Agency, Coal Utilization Research Council, MIT Center for Energy and Environmental Policy Research and Electric Power Research Institute) have called for increased funding for this purpose. These recommendations for investment in energy technologies related to electricity alone aggregate to just under \$2 billion per year, which is a substantial sum, but one that would be roughly double what is spent today.

Energy Technology Deployment Funds

Contrast this amount with the funding for advanced technology deployment contemplated in the legislation to create a greenhouse gas regulatory program. Senate bill S. 2191, the Lieberman-Warner Climate Security Act of 2007, may be considered on the Senate floor before summer 2008. This bill creates a financial incentive for the development of new energy technologies that enable carbon dioxide emission reductions. S. 2191 proposes the use of a substantial portion (52%) of the proceeds of the auction of emission allowances (defined as the right to emit one metric ton of carbon dioxide equivalent (mtCO₂e) in a cap-and-trade program to create five Energy Technology Deployment funds:

- Zero- or Low-Carbon Energy Technology Program;
- Advanced Coal and Sequestration Technologies Program;

Given that the pool of funds created under climate change legislation is substantial – \$51 billion over the first five years – U.S. climate policy should create a host of investment options for alternative asset managers including traditional long/short equity options, potential carbon markets long/short, arbitrage or derivatives opportunities and direct investments in the energy and technology sectors. In addition "next generation," socially-responsible investment vehicles and fund of funds may hold appeal for certain asset managers.

- Sustainable Energy Program;
- Fuel from Cellulosic Biomass Program; and
- Advanced Technology Vehicles Manufacturing Incentive Program.

Adopting as a nominal figure for this analysis an allowance price of \$10/mtCO₂e (a conservative figure and one that allows for ease of multiplying to a range of likely allowance prices – \$15 to \$50 by most estimates), the value of these funds over the first five years of a 40-year regulatory program totals \$34 billion. Indeed, the first year of funding alone will provide \$5.1 billion. This is a substantial allocation of funds to create demand for advanced technologies across a broad range of applications. Another mechanism to generate this funding stream could come from the imposition of a carbon tax.

Zero- or Low-Carbon Energy Technology Program: This program would award the bulk of its funds based on a reverse auction for manufacturers of high-efficiency consumer products and generation of electricity from new zero- or low- carbon technologies. As most observers believe that the lowest cost reductions of CO₂ in the economy will come from increased energy efficiency, high-efficiency consumer products should receive much of the funds from this program (\$10.5 billion in the first five years). Funds can also be awarded to manufacturers of zero- or low-carbon electric generation technology and components.

Advanced Coal and Sequestration Technologies Program: This program awards funds to projects that capture and sequester the CO₂ emissions associated with burning coal for

electricity generation. The projects would have to meet increasingly stringent performance requirements over time. The funds available to the program in the first five years are \$8.2 billion.

Sustainable Energy Program: Another \$8.2 billion over the first five years is directed to the Sustainable Energy Program. Sustainable energy is defined to include wind, ocean waves, biomass, solar, landfill gas, incremental hydro and geothermal energy sources. This is a substantial increase in funding, as the current renewable energy production tax credits cost the U.S. Treasury about \$400 million per year. These funds will provide additional incentives to deploy advanced renewable technologies in the United States.

Fuel from Cellulosic Biomass Program: The fund to provide deployment incentives for fuel from cellulosic biomass will total \$2 billion over the first five years. The fund will be awarded to a variety of projects relying on different feedstocks that domestically produce transportation fuels from cellulosic biomass. This fund's awards will be divided among producers of different classes of transportation fuels, as well as projects to construct associated distribution and delivery infrastructure (e.g., pipelines).

Advanced Technology Vehicles Manufacturing: The incentive program for advanced technology vehicles manufacturing will be awarded to manufacturers of vehicles (or components designed for such vehicles) that meet a standard of at least 125% of the base year combined fuel economy, as well as new criteria pollutant emission standards. The funding for this program over the first five years is \$4.9 billion.

Opportunities for Asset Managers

Given that the pool of funds created under climate change legislation is substantial – \$51 billion over the first five years at the generally agreed upon low-end allowance price of \$15/mtCO_{2e} – U.S. climate policy should create a host of investment options for alternative asset managers. These might include traditional long/short equity options, potential carbon markets long/short, arbitrage or derivatives opportunities and direct investments in the energy and technology sectors. In addition, “next generation,” socially-responsible investment vehicles and fund of funds may hold appeal for certain asset managers. Finally, depending on their strategies, asset managers may be interested in influencing the policy debate with an aim to securing favorable incentives and/or climate policy design features that will foster market growth of certain sectors, attract capital investment, or ensure the availability of carbon market finance options. ©

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