Investors’ views on climate change

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Abstract
The Kyoto Protocol contains provisions that have the potential to mobilize significant financial resources to mitigate global climate change. However, the emissions reductions called for by the Protocol will require broad based public and private collaboration as well as clear national and international policies to help establish new trading mechanisms and institutions. Because this is the first time the private sector is being called upon to participate in such a large-scale, global environmental effort, there is some uncertainty how the investment community will respond and when it will begin to engage in the carbon market in a meaningful way. This paper makes general observations about how the investment community has responded to climate change, and the extent to which the larger policy discussions are having an impact on investment activity. The paper also discusses investments that are compatible with climate change mitigation objectives, but which are taking place completely or somewhat independently of the global policy framework. The investors’ views described here are based on interviews across a variety of investment sub-sectors, as well as an accumulated impression developed over several years of working at the intersection of finance and the environment.

Introduction
The Kyoto Protocol contains provisions that have the potential to mobilize significant financial resources to mitigate global climate change. Flexibility mechanisms outlined in the Protocol, including joint implementation (JI), the Clean Development Mechanism (CDM), and emissions credit trading, allow for international collaboration in reducing greenhouse gases (GHGs), thereby establishing the path by which a large proportion of the financial resources could be directed to advance clean development in developing countries. The emissions reductions called for by the Protocol will require broad based public and private collaboration. Clear national and international policies must be established, the rules must be kept as simple as possible, and appropriate incentive structures must be created and communicated. It should be noted that this is the first time the private sector is being called upon to participate in such a large-scale, global environmental effort that requires the establishment of new trading mechanisms and institutions, new emissions valuations, and targeted investment. The questions remain, however, has the private sector heard the call, and has it been in the right language?
Monitoring and representing “the perspective” of a sector as large and diverse as the financial sector is an extremely difficult task; to do so on an environmental issue such as climate change is even more challenging. With the exception of a select few institutions and individuals, the mainstream investment community does not appear to be convinced that environmental issues have any bearing on their business. In the United States in particular there is still very limited discussion of climate change in the financial services sector. It is therefore difficult to make conclusive statements about the industry’s perception of the issue. Thus, this paper focuses on some general observations about how the issue is being discussed, where, and the extent to which it is having any impact on investment activity.

The investors’ views described here are based on interviews across a variety of investment sub-sectors, as well as an accumulated impression developed over several years of working at the intersection of finance and environment. In researching the financial community’s views on global climate change as a business issue, soliciting opinions from specific individuals was often easier than identifying the policy of the firms they represent. Frequently, these individuals requested that their comments remain anonymous until they were better able to gauge their firm’s policy on this issue.

Which segments of the investment community are engaged on the climate change issue?

Overall, the climate change issue has not provoked the active interest of the investment community. One might expect that those investors with exposure to the sectors with the greatest carbon liabilities, such as electric power, building, and transportation, would be the most concerned. After all, if binding global regulations emerge, these are the sectors that will be the focus for emissions reductions, through technology and process upgrades, or through credit trading. However, only a small subset of these investors are actively incorporating climate change into their investment criteria. These include:

- **Corporate (strategic) investors**: Leading strategic investors in the energy sector in particular have initiated notable emissions baselining efforts and exploratory offset trades to establish themselves in what they see as an emerging market. Several have also made headlines around the world with their financial commitments to alternative energy technology development.
- **Some institutional investors**: Of this very large investment base, only a select group of insurance companies, primarily in Europe, have begun to look for investments in alternative energy sources and other “low-carbon” technologies. Because the insurance industry operates by managing long-term savings and investments, it cannot ignore the possible effects of climate change on long-term pension and life-insurance investment portfolios. Even though the socially responsible investment funds (SRI) are much more aware of the issue and are more likely to incorporate it as an investment criterion, as a whole, they represent a very small percentage of institutional capital.
- **Venture capital and private equity funds**: There are only four venture capital funds in the United States that are focused on emerging energy technologies. The climate advantages of these technologies are one aspect of these technologies’ perceived strength and market advantage, but by no means the sole or even leading criteria.

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2 Even though more than U.S.$1 trillion, or 10% of all professionally managed money, is now screened in one way, the fraction of such funds screened on environmental grounds is very small.

3 There are approximately 800 venture funds based in the United States that each have over U.S.$25 million under management. In Europe there are many fewer.
Why are certain segments of the investment community not engaged on the climate change issue?

Investment banks, commercial banks, and most institutional investors (pension funds, mutual funds, universities, and foundations with large endowments, etc.) have not yet recognized the relevance of climate change to their core business interests. Explanations for the lack of interest by these investors include:

- **Policy vacuum:** The United States continues to lack a clear policy framework around climate change at the federal level. This policy vacuum is contributing to inaction on the part of the private financial sector. In Europe, where a greater number of clear policies on climate change have been articulated by government, private industry and the financial sector have begun to respond more seriously. Some notable emerging industrial champions in the United States are acknowledging that human contribution to global climate change will be a significant business issue in the future. These firms are in the minority, however. The same firms were also particularly adamant about the failure of the federal government to provide sufficient leadership in this area. Over time, the financial markets may come to support or reject these industry leaders.

- **Conflict of interest with clients:** Firms in the investment or commercial banking sector representing companies with potential carbon liability will be hesitant to publicly announce that they perceive climate change as a legitimate issue worthy of regulatory interest. Investment banks and financial advisory services are likely to follow the lead of their clients and conventional thinking within each industry on this issue.

That said, leading investment banks are developing greater interest in the alternative energy market. Providing underwriting services for initial and secondary public offerings is a highly lucrative business. Leading analysts at major investment houses such as CIBC, Goldman Sachs, and Robertson Stephens have undertaken coverage of this industry and are now incorporating climate change criteria into their analyses.

- **Incentive structure/political neutrality of capital markets:** The incentive structure within the financial services industry places value on revenues generated in the near term, with bonuses tallied on an annual basis. As an investment issue global climate change is, at the very earliest, a mid-to-long term issue. Analysts, traders, and money managers are unlikely to face either any risk or upside within their investment time horizon. Institutional investors or lenders are likely to be concerned with risks of this time horizon but, to date, have shown little interest in the issue.

For those investors who are concerned or actively engaged with the issue, what are the main factors that have influenced them?

Several factors have stimulated the interest of those few investors interested in climate change. They include:

- **Public relations benefits:** Many early-stage investments in Activities Implemented Jointly (AIJ) and Joint Implementation (JI) projects and similar carbon-related initiatives have, arguably, primarily been stimulated by companies’ interest in being seen as good corporate citizens by consumers, stakeholders and governments. Indications are that other factors described below are beginning to carry more weight.
• **Strategic benefits from being an early actor:** Several early investors got involved in AIJ and JI projects in order to learn first-hand about the range of opportunities available and how such projects might work. This, they believed, would put them ahead of the game once formal frameworks were developed, and would enable them to identify the cheapest and most effective offsets.

• **Potential investment opportunities in low-carbon technologies:** A few investors were primarily stimulated by what they saw as good investment opportunities in new technologies, including distributed and renewable energy technologies. Larger energy companies also see this as a diversification in their energy technology holdings or as a hedge against regulatory action against their core business areas.

• **Meeting their own internal environmental policy objectives:** Some leading companies have developed their own environmental policies, including those to reduce emissions of CO$_2$ from their own operations. Shell, BP Amoco, Elf, and Totalfina are among the leaders in stated reductions of emissions and in terms of developing alternative, low-carbon fuels and technologies.

• **Risk mitigation opportunities:** Some investors have been reviewing ways to mitigate their risk exposure to high-carbon sectors and companies. Insurance companies, primarily in Europe, have recognized that the time horizon for projected climate change effects is not so dissimilar from the time horizons incorporated into the actuarial calculations of the industry.

**How does the level of awareness of climate change in the financial services sector differ between the United States and Europe?**

Awareness of climate change is generally higher in Europe, particularly among the insurance and reinsurance industries. This can be attributed to a history of policies in Europe which now complement climate objectives, and to a general support by the European populace for more activist fiscal policy. For example, in a number of European countries, a carbon (or energy) tax has already been implemented. In the United States it is generally accepted in the policy and advocacy communities that similar taxes are unlikely, due to the resistance of many large corporate interests, as well as an unwillingness on the part of the population to change consumption habits. Tax incentives are typically the preferred fiscal tool to redirect investment and consumption in the U.S.

Within the insurance industry, U.S. and European companies see this issue through different lenses. For example, the U.S. insurance industry is focused more on the mitigation of climate related damages and claims, and has invested in efforts to study building codes and revise actuarial data on policies. Innovative financial solutions such as disaster bonds or weather hedges have emerged. In Europe there is more interest and openness in considering the causes of climate change—and firms have begun to invest in technologies and companies that might address these causes. There are also a select few companies where strategic investment decisions are being made, in part, with climate change liabilities as an investment criterion.

**How do investors perceive the climate change policy environment?**

In general, investors see the policy environment as very weak and as a primary factor limiting their involvement in the debate. When questioned about climate change, many investors in the United States point out that the strength of the
financial sector is in its political neutrality and in its ability to respond to the opportunities created by a given policy framework. Given the current debate in Washington, D.C., most investors do not see regulation of carbon as a near-term possibility and are therefore not devoting resources to addressing potential business implications as yet. Strategic and institutional investors have expressed hope that the U.S. government will take more of a leadership position on this issue.

**What kinds of investment opportunities are being created by climate change and how are investors responding to them?**

*“No-regrets” investments in low-carbon technologies*

Where capital investments have been made, they are “no-regrets” investments, i.e., those that make strategic and economic sense, that are insulated from regulatory risk from climate change treaties, and that might have some ‘credit’ potential. For example, it makes sense for utilities to improve the efficiency of their boilers and generating equipment in order to compete in the emerging competitive market for electricity. Optimizing the heat rate of a power plant from 33% to 40% makes sense from a business perspective, and it also reduces risk from regulatory requirements based on climate change.

From a technology investment perspective, climate change is only one of several factors influencing the development of new areas of opportunity. Global restructuring and privatization, deregulation in the United States, rising environmental standards in general, and the growing power needs of the developing countries are all drivers creating opportunities for technologies that may also have climate benefits. These low-carbon technologies include energy efficiency, renewable energy, and certain types of distributed generation.

Over the past few years, corporate investment in the alternative energy field has proliferated. BP Amoco, for example, has shaped much of its investment strategy around next generation fuels and technologies. This has included not only expanding their traditional business of oil and gas exploration, development, and downstream distribution, but also moving into new areas such as photovoltaics and cleaner transportation fuels in key markets.

Competitors such as Shell, Texaco, and Suncor Energy have similar initiatives underway to stake claims in the future energy market. Shell has made public commitments to invest US$500 million in developing its fifth core business, Shell International Renewables, over the next five years. Also, Shell Hydrogen has been developed to create infrastructure solutions to meet the expected growth of fuel cells, a non-polluting, efficient source of electricity that many believe will grow rapidly over the next several decades. Texaco Energy Systems has been created to leverage Texaco’s gasification and catalyst expertise and apply it towards fuel cell applications. Suncor in January 2000 announced that they would launch a US$100 million fund to invest into renewable and alternative energy projects.

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munications technologies. Sempra Energy, Duquesne Enterprises, DTE Energy, and others have made significant investments into similar ventures.

Of late, the public equity markets have become enamored with alternative energy stocks. In the United States, stocks for fuel cell makers Plug Power, Ballard, and Fuel Cell Energy skyrocketed in value in 2000. Capstone Turbines, a leading microturbine manufacturer, saw its stock price rise 200% on the day of its initial public offering. (Although, like Internet stocks, these often drop back down to less stratospheric levels after investors initial euphoria.) Other stocks related to alternative energy such as Astropower, a leading photovoltaics manufacturer, and Unique Mobility, a components manufacturer for next generation automotive technologies, have also gained ground. European companies such as Johnson Mathey, makers of fuel reformers for fuel cells, and Vestas, the leading manufacturer of large wind turbines, have experienced similar growth in value.

Numerous automobile manufacturers such as Ford, DaimlerChrysler, General Motors, Honda, and Toyota have also made notable investments into new technologies such as fuel cells, flexible fuel vehicles, electric vehicles, and hybrid-electric vehicles. Ford and Daimler Benz have invested hundreds of millions into Ballard for the development of the fuel cell power-train. Hybrid electric vehicles such as the Honda Insight and the Toyota Prius are already on the market in limited production, while GM’s Precept and Ford’s Prodigy models are expected on the market by 2003. Fuel cell vehicles continue to develop and are likely to first be seen in transit applications such as buses.

Carbon offset investments/trading
Some more active and entrepreneurial players are looking at carbon trading opportunities that are arising from the Protocol. U.S. investors appear to be more interested in this than investors in Europe, perhaps due to a greater familiarity with emissions trading regimes such as the SO$_2$ market created by the Clean Air Act.$^5$

U.S. carbon brokers indicate that trading activity for carbon offsets is accelerating. Buyers of credits and options for credits have been participating in trades with an emphasis on credits for the years 2006 through 2010. This reflects some consideration of the timetable of the Kyoto Protocol.

In January of 2000, the World Bank launched its Prototype Carbon Fund (PCF) as one trading mechanism available within the global carbon offset market. The Fund is capped at U.S.$150 million and is scheduled to terminate in 2012. The PCF will provide a mechanism whereby buyers and sellers of carbon offsets can invest in a pool of carbon investments, generated by the carbon emissions reductions created by projects in countries where the project costs are lower. The PCF is not without controversy and there are many who question its structure and potential impact. Still, the PCF is drawing significant interest from governments and the private sector. To date, the PCF has received commitments from six nations and fifteen companies.$^6$ Twenty countries have expressed interest in hosting PCF projects, and additional private sector co-investment is sought. This fund is an

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$^5$ The evolution of the SO$_2$ market in the United States provides a useful example of the potential efficiency of the market in meeting environmental objectives. It was expected that a secondary market in trading would emerge as the most cost-effective way to reach private sector obligations. There were industry estimates that projected the cost of investment necessary to meet obligations would be near U.S.$100 billion. In the early 1990s the U.S. Government and consultants to the U.S. Environmental Protection Agency were forecasting that the average price for SO$_2$ credits would range between U.S.$600 and U.S.$1,000/ton. All the predictions were wrong. As of today, a median price for SO$_2$ trades is U.S.$100/ton. The total volume of investment in SO$_2$ credits during the last three years has been roughly U.S.$4 billion.

$^6$ Canada, Finland, Japan, the Netherlands, Norway, and Sweden have all agreed to participate in the PCF. Corporate participants include BP Amoco and six Japanese electric power companies. A complete list of participants can be found on the Fund’s website: www.prototypecarbonfund.org
example of a collaborative public-private partnership, created to address the financing needs of the carbon market. Other pooled funds are likely to develop as the rules of the carbon market are established—especially those that will afford credit for early action. Meanwhile, Credit Lyonnais and Arthur Anderson plan to launch a U.S.$400 million fund to invest in energy infrastructure projects intended to generate carbon credits. At the time of this writing the fund is still in the planning stage and is due to be launched later in 2000. Prime investment targets are likely to be projects in developing countries that will qualify as CDM projects under the Kyoto Protocol. Several smaller funds exist, such as the U.S.$150 million DexiaFondElec Energy Efficiency and Emissions Reduction Fund and the upcoming U.S.$65 million fund by Union Bank of Switzerland.

Given the much greater uncertainty surrounding the potential for forest based carbon-offset investment, few forest products companies or investors in the forestry sector, have, as yet, shown great interest in the opportunities generated by the Kyoto Protocol and the CDM. Hancock Timber Resources, a division of Hancock Natural Resources Group (HNRG), is a notable exception. HNRG is the world’s leading forest and agricultural investment management organisation for institutional clients, with U.S.$3.2 billion and 3.2 million acres under management. The company recently announced the establishment of a forestry-based carbon offset investment fund targeted towards Australian forestry investments. The Fund will be based in Sydney in order to build on the work of State Forests, a New South Wales government trading enterprise that has significant forest acreage under management and has pioneered trading in carbon credits. The location will also allow access to the new carbon sequestration credit market being developed by the Sydney Futures Exchange, the largest futures exchange in the region.

Do investors see climate change as creating new liabilities, and how are they responding to them?

Most investors are still unsure of exactly what their liabilities will be. In Europe, greater clarity surrounding public policy on climate change has prompted greater levels of dialogue—seeming to indicate that potential liabilities may be taken more seriously.

The activities of some strategic investors indicate that they are proactively trying to mitigate potential liabilities—although it can also be said that they are pursuing new opportunities. They are taking early action to familiarize themselves with possible offset alternatives, to develop baseline estimates of current and past emission rates, to understand and gain experience with trading mechanisms, and to provide input to the policy debate. Examples include:

- BP Amoco’s internal trading system for carbon emissions, their participation in a forestry offset project, and voluntary pledges to reduce the company’s 1990 emissions levels by 10% by the year 2010.
- American Electric Power’s (AEP) efforts to improve internal efficiency measures including power plant operations and customer efficiency projects, their participation in the Pew Center on Global Climate Change, and early forestry offset projects. AEP felt that they were unprepared for dealing with the sulfur emissions requirements of the Clean Air Act and are trying to be better prepared for the outcome of the climate change debates.

7 Forest-based offsets and other details of the Kyoto mechanisms are to be refined at the Sixth Conference of Parties to the UN Framework Convention on Climate Change, scheduled for November of 2000 in The Hague, the Netherlands.
Arguments from certain industry groups that carbon regulations would place a large portion of their corporate value at risk seem to indicate that these companies should be disclosing such potential risk to their investors. This is an area that merits further attention from financial advisors. It should be noted that the Global Climate Coalition, the most powerful corporate lobby in the United States that is opposed to the Kyoto Protocol and related regulations, has been significantly weakened in the last year. Automakers Ford and DaimlerChrysler left the coalition in December of 1999, followed by Texaco in February of 2000. These companies still claim that the Protocol’s regulatory approach is too costly. As indicated above, all are now voluntarily increasing their investments in alternative technologies.

What can be done to stimulate greater interest and response among the investment community?

Policy framework that supports investment in low-carbon technologies and other mitigation solutions

A variety of policy measures can help, including production tax incentives for alternative fuels, a better link between government research and development funding, private commercialization finance for low-carbon technologies, emissions disclosure regulations, support for the establishment of national registries and information on carbon trends, and carbon taxes. Some measures, such as a fuel tax, will be more or less feasible, depending on the country. Creating policy mechanisms that would allow venture capital, strategic, and private equity investors in low-carbon technologies to receive carbon credits for their investments would enhance returns on this type of investment and mobilize more capital towards it.

One particularly interesting result of interviews with U.S. investors was broad agreement that the U.S. government should avoid subsidies targeted at specific technologies. The investors held that past programs had been extremely inconsistent and success had been limited—perhaps doing more harm than good in the long-term. In the words of one experienced debt and equity investor, “Instability of tax incentives makes longer-term capital market interest impossible.”

Alternative to subsidies have been suggested. One is to provide a tax credit when long-term capital gains have been captured. Credits that are made to investors who have realized such gains would support—and not distort—investment in sound and profitable projects and companies. Production credits are also thought to be more effective in stimulating long-term development and success of the market than simple investment tax credits. Finally, as most of these projects have high capital costs, any financial mechanism that can help reduce capital costs and allow the projects to be financed over the life of the assets (maximizing long-term debt financing) will be very helpful.

Education and information dissemination

Accurate information is critical to making wise investment decisions. Exploiting new investment opportunities will require increased availability of information on technologies, markets, and regulations to help companies and investors make investment decisions and identify opportunities related to climate change. As a result, resources should be devoted to overcoming informational barriers to developing and financing new low-carbon technologies.
• **High-level CEO seminars**: Educating the CEOs of energy generation and automotive companies in private, exclusive non-political briefings about the consensus on the role of fossil fuel burning in climate change would be highly valuable. This would help corporate leaders understand the magnitude of the problem they face, and might encourage them to discuss them with their financiers.

• **Investor forums**: Dissemination of information could take place through the facilitation of investor forums for emerging technologies, and through support for objective studies that can quantify risks and opportunities to investors. Lead sponsors from the investment community should be sought out and the government may play a role in providing information to the group or helping to support convening the forum (investors interviewed said they would be skeptical of government-convened forums).

• **Publicize investment successes**: Broader investment interest might be garnered by publicizing investment successes in low-carbon technologies within the investment community. Projects that have successfully met return-on-equity (ROE) and debt expectations should be profiled and brought to the attention of the larger investor community.

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**Documentation and disclosure**

• **Document and quantify potential risks to different classes of investors**: Different classes of investors will be affected by climate change and associated regulation in varying ways. To help identify these various risks, studies could be prepared to help inform investors and analysts about the potential financial risks to their investments and how they might price that risk. Lenders with long-term maturities for loans could see how future regulations affect their portfolios if they are heavily weighted towards fossil fuel-based energy sources. Institutional investors with long-term equity holdings might see the valuation of their securities diminished as a result of regulation. The insurance and reinsurance industries might be affected both in the types of policies they offer for property and casualty as well as the potential for increased claims. In addition, insurers might also see their portfolio of investments affected by regulations that limit GHG emissions. A well-designed study to analyze how the different sectors within the financial industry could help each to identify their liabilities and suggest strategies for mitigating that risk.

• **Disclosure of carbon liabilities**: Were government or the Securities Exchange Commission (or its equivalents) to take a stronger stance with respect to the disclosure of environmental liabilities, including potential carbon liabilities, greater response from industry and investors might be expected. One suggestion would be to convene national or regional forums of financial advisors and equity analysts to examine the issue of long-term value at risk in the portfolios of large energy companies and energy investors—particularly those who have been so vocal in opposing the Kyoto Protocol and any regulation of carbon
emissions. At a minimum, a systematic way to display carbon trends should be developed and tracked by energy analysts.

Conclusion
Discussion of climate change in the financial services sector was previously very limited. However, over the past two years the climate change debate has evolved beyond simply questioning the existence of the global warming phenomenon. Investors’ awareness of the issues and opportunities is increasing. Although climate change goals or sensitivities may still not be a central motivating factor behind investor’s decision-making, a number are increasingly willing to reference the climate change benefits of their low-carbon investments.

Insufficient national climate policies, potential conflicts with client interests, and time horizons that don’t match with climate change eventualities all continue to limit investor interest in climate change-oriented activities. However, these factors are gradually being overcome by the awareness of the public liability of inaction or opposition to the Kyoto Protocol, the strategic advantages from early action, and increasingly diversified investment opportunities. Changing market conditions, such as utility restructuring in the United States, have created significant opportunities for investment in low-carbon technologies, and activity is continuing to intensify in this area. These “no-regrets” investments are already economically and strategically sound and, further, serve to safeguard against potential future climate change regulations. Several large corporations have begun to demonstrate interest in testing the market and gaining experience with developing low-carbon technologies by committing to environmental policy objectives, and investing in the development of alternative energy technologies. Several major auto-manufacturers have also started taking precautions in anticipation of future regulations by investing in new vehicle technologies. In addition, investor interest in carbon offset investments and trading is developing, and international carbon trading mechanisms are being established for the first time.

In order to foster even greater interest from the financial services sector in low-carbon investment, national and international policies must be unambiguous and accompanied by appropriate incentive systems. Dissemination of information on emerging technologies, markets and regulations will be crucial to further private sector involvement, as will publicity of successful investments in markets where such technologies are already playing a key role. Finally, in order to capitalize on the growing awareness of climate change issues and opportunity areas in the private sector, it will be important to encourage greater alignment between companies’ perceptions of their core business interests and their potential climate change interests.
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