

## MEMORANDUM

**Re: International GHG Policy Trends**

**Date: November 18, 2006**

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Melting glaciers, an increase in violent weather, and other geographic indicators have offered tangible, physical evidence of the effects of Global Warming, and has contributed to the development of an international consensus on the need for action. While some disagree on magnitude and methodology, few disagree that emissions of carbon and greenhouse gases must be dramatically reduced to slow this climate change. As a result, the last ten years has witnessed a significant increase in greenhouse gas (GHG) mitigation programs.

Along with mechanisms that would mandate point source reductions, emissions trading has emerged as a preferred policy instrument to cost effectively achieve reductions. In the 1990s, the international community agreed to the Kyoto Protocol, a cap and trade system celebrated as the unifying vehicle to reduce GHG emissions worldwide. This effort lost some momentum when the United States, one of the world's largest sources of greenhouse gases, failed to ratify the accord.

Normally a leader in such matters, the United States' refusal to participate in the Kyoto accord caused a ripple effect that weakened the central authority of the international agreement, and ultimately created a dynamic in which a global system is being built from the bottom up.

### *The Kyoto Protocol*

The Kyoto Protocol is an extension of the United Nations Framework on Climate Change (UNFCCC), a treaty produced at the Conference on Environment and Development, held in Brazil in 1992. Countries are divided into two general categories: developed and developing. Participating developed nations commit to reducing emissions of CO<sub>2</sub> and reductions, and undeveloped countries are exempt from this requirement. This arrangement promotes the goal of reductions in countries that generate the most greenhouse gases, and, as described below, incentivises investment in offset projects in developing nations that could not otherwise afford reduction programs.

In a Cap and Trade system, carbon credits can be bought and sold. Allowances can be traded on financial exchanges (such as the new EU Emissions Trading Scheme) or offsets can be acquired from projects in other developed nations through the Joint Implementation (JI) program, or from developing nations through the Clean Development Mechanism (CDM).

Of the two offset programs, CDM is the more popular because emissions reduction in poorer countries can be significantly less expensive. The CDM is supervised by the CDM Executive Board (CDM EB), which, under Kyoto rules, must certify emissions reductions agreements before they can be credited to the buyer's allowance.

### China, Asia, and the Clean Development Mechanism

Asia has emerged as the most active market for CDM offset projects. China, despite its widely recognized status as an industrialized nation, is concurrently exempt from the emissions reduction requirement imposed on developed nations, and eligible to host CDM projects. As a result of this distinction, domestic energy needs, and a commitment to being a major player in this market, China enjoys a dominant market share in the program, hosting 60 percent of CDM offset projects. Since August alone, the Chinese government has approved 44 carbon reduction projects, including a massive nitrous oxide reduction project that aims to generate 10 million carbon credits per year.

China is far more advanced than its neighbors in terms of an organized system for attracting and developing CDM projects, which buyers find very desirable. However, China is expected to increase floor prices, which may cause buyers to look elsewhere in the region for offsets. In addition, the additionality of a couple of large offset projects in China has recently been questioned, which has raised concerns regarding the countries' approval methodology.

China's dominance of the CDM market will likely decrease, regardless of the aforementioned issues, as other host countries catch up with China's ability attract investors and develop projects. India has aggressively pursued CDM projects, and now holds a 15 percent market share, an increase of 12 percent over the previous year. Malaysia, Thailand, and Indonesia are other active participants in the CDM program.

### The Buyers

Many US companies with operating units in Europe are subject to the allowances allocated by the Kyoto accord, and the EU cap and trade system. These emitters are already taking advantage of the granted flexibility by investing in CDM projects that will earn credits that can be used to offset emissions or traded on the EU Emissions Trading Scheme.

US based companies with no operations in Kyoto protocol nations are not compelled to participate in trading programs, but many see the value in investing in GHG abatement programs, and are preparing for a shift in GHG policy. Forward-looking companies recognize three realities that motivate their decisions to participate in emissions trading programs:

1. The more developed and successful emissions trading becomes, the more likely that framework will be enacted into law over point source "command and control" schemes;

2. Assuming verifiable credits will be honored and applied against future emissions limits (as they hope will occur), credits are cheaper now than they will be when participation is compulsory. Positioning themselves ahead of the curve will allow them to making money while transitioning to the inevitable change in operating environment;
3. From an operations perspective, gradual integration is cheaper and less intrusive.

### *Chicago Climate Exchange (CCX)*

Without regulatory requirements, US emitters must rely on reputable private entities to provide a structure for emissions trading, and help them manage the transition to the new regulatory system. To this point, these organizations fall into two categories: financial exchanges that provide a platform and regulations for emissions trading, and environmental trust organizations that broker transactions. As will be discussed later, additional organizations are expected to emerge over the next few years that will defy this categorization, but so far, it holds.

The Chicago Climate Exchange (CCX) is the premiere financial exchange for emissions trading in the United States, and perhaps North America. CCX is a global, member-based exchange that administers a voluntary, legally binding program for reducing and trading GHG emissions. By treating emissions as a commodity, CCX operates much like the NYSE or other stock exchanges.

Upon joining the exchange, participants are divided into one of four categories, but only two are particularly relevant for the purposes of this discussion. “Members” are emitters with facilities in North America, and “participant members” are offset project developers, brokers, and, in general, entities associated with the supply side of offset transactions.

Members are assigned a baseline value based on recent performance. This baseline decreases each year by 1 percent. Members that reduce emissions below their assigned baseline can sell the difference on the exchange, or bank them for future use. A member that fails to achieve the target level can purchase allowances from other CCX members to meet compliance obligations, or purchase offsets from participant members.

Offsets must be verified and monitored by CCX approved auditors, and consist of methane collection or carbon sequestration projects that can demonstrate measurable reductions. Representative projects include include forestation and other related agricultural practices, renewable energy and conservation, fuel switching, energy efficiency, and fugitive gas transfer.

## *The Climate Trust*

The second category is represented by The Climate Trust; an Oregon based non-profit organization with roots in Oregon's implementation of global warming legislation. In 1997, the state of Oregon enacted legislation that requires new power plants to offset a portion of projected CO<sub>2</sub> emissions as a condition for obtaining an operating permit. Plant developers can acquire offsets on the market, or they can pay The Climate Trust \$.85 per projected ton to manage the required transaction(s) on their behalf. The Climate Trust since has expanded its scope, and consults with buyers and sellers internationally.

### *Project Requirements*

Whatever the governing body, project-based emissions trading systems are generally predicated on the following elements:

*Baseline* – The standard by which performance is measured. Decisions to buy or sell credits are made according to ability to comply with this standard.

*Surplus* – Proof that reductions are not achieved through activities undertaken to comply with existing regulation.

*Environmental Additionality* – Proof that emission reductions would not have occurred in absence of the project.

*Monitoring and Verification* – Confirmation from qualified third party that proposed project is auditable, and can provide credible, quantitative confirmation of project performance.

*Durability* – Reductions must be sustainable.

*Ownership* – Proof of ownership of reductions. Once credits are sold, the project developer cannot resell those credits until the terms of the original agreement have expired. This requirement is designed to prevent sellers from entering into agreements with multiple buyers for the same credits.

### *US GHG Public Policy Developments*

#### *Regional Greenhouse Gas Initiative*

The Regional Greenhouse Gas Initiative (RGGI) was formed as the next step for a group of Northeastern states that had organized to eliminate the migration of emissions from Midwestern power plants. Specifically, it is an agreement signed by seven Northeast states, and codified in a Memorandum of Understanding, committing to freeze carbon dioxide emissions at current levels, and work toward a ten percent reduction by 2019. The original signatories are: Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York and Vermont. Massachusetts had been the eighth member before backing out, but is expected to sign on with the administration change. California and Maryland have also announced intentions to join the alliance within the next year.

Under the program, expected to take effect in 2009, power plants in participating states will be issued a limited number of carbon credits, equal to the amount they are allowed to emit. Plants that exceed their limits must purchase additional credits to cover the additional pollution. Those that produce less carbon can sell their surplus allowances.

Between 2015 and 2019, the allowance will shrink by 2.5 per year to achieve the 10 percent reduction.

Eligibility for offsets is determined by the price of credits, adjusted each year for inflation plus 2 percent. If the price remains below \$7 per allowance, buyers may pursue offsets from anywhere within the United States. If the price exceeds \$7, but stays within \$10, allowances can be purchased from projects throughout North America. A “safety valve offset trigger” allows buyers to pursue international offset projects if the price exceeds \$10 per allowance.

More than twenty-five other states have expressed interest in reducing their own GHG emissions, and participating in regional and/or national agreements. RGGI planners hope to provide leadership for a national framework of emissions trading organizations, and has postponed implementation to allow more states to sign on. Since they are way out in front of other regional efforts, and, especially in light of California’s decision to join, the RGGI will likely attract many of these interested states.

#### *Representative Legislation*

Over the past several years the US government has been deadlocked on how best to curb global warming, leaving state and local officials to try to fill the void. With the recent party shift, a new Democratic Congress, one that is predisposed to global warming legislation, is set to take over in January. With several global warming bills on the agenda, Congress should be able to accelerate development of a national system for emissions trading. The following sample of GHG bills shares a common thread: ambitious goals and cap and trade systems to implement them.

*S. 3698* – Among other things, the Global Warming Pollution Act, introduced by Jim Jeffords, Barbara Boxer, and nine other Democratic Senators, would set a goal for GHG emissions reductions to 1990 levels by 2020, and require the EPA to create and implement a market-based program to achieve this goal. The bill also calls for further reductions incremental reductions in the following years, culminating in a 80 percent reduction (of the 1990 baseline) by 2050.

*S. 4039* - The Global Warming Reduction Act seeks to amend the Clean Air Act to establish a global cap and trade system with a goal of achieving a global atmospheric concentration of no greater than 450 parts per million, and a 65 percent reduction (compared to 2000 levels) by 2050. This bill, introduced by Senator Kerry and co-sponsored by Senator Snowe, also offers support for these goals by encouraging alternative energy resource development, energy efficiency programs, and GHG sequestration projects. The bill was referred to the Finance Committee.

*HR 5642* – The Safe Climate Act of 2006, sponsored by Henry Waxman and co-sponsored by 110 of his colleagues in the House of Representatives, strives to amend the Clean Air Act to direct the EPA to develop regulations to achieve 2% annual reductions in greenhouse gas emissions from 2010-2050. It also promotes a cap and trade system to reach these targets. If enacted, the Executive Branch would be required to submit a plan

to Congress that would distribute emissions allowances, report and authenticate transactions, and earmark proceeds for a Climate Reinvestment Fund.

To support this transition, the law also would amend the Public Utility Regulatory Policies Act of 1978 to require an annual increase in use of renewable sources starting in 2009. By 2020, 20 percent of the total supply of electricity must be generated from renewable energy sources.

*HR 5049* – Tom Udall introduced the Keep America Competitive Global Warming Policy Act of 2006, a bill that would create a cap and trade system for regulating greenhouse gas emissions, and promotes alternative energy resource development. The bill also requires the EPA to implement a system for review and approval of domestic sequestration project proposals, and issue allowances based on the volume of captured greenhouse gas.

### Conclusion

In the absence of participation in the Kyoto Protocol, or other national leadership in GHG emissions control, Political and market pressures in the US have driven evolution of a loosely constructed, informal emissions trading system. Through individual initiatives, and regional and international agreements, states are taking the lead in establishing trading programs to control and reduce the release of greenhouse gases into the atmosphere.

The recent shakeup in Congress shows promise for rationalization of U.S. GHG policy. Barring a Presidential veto, Congress could well enact a bill to create a cap and trade system that builds upon existing systems and institutions to create a compulsory national framework for emissions trading.

National leadership would also accelerate a linkage to international markets, because a failure to do so would put US companies at a competitive disadvantage. US companies would be forced to pay higher rates for credits and offsets than international counterparts who are permitted to invest in developing nations.

Under this scenario, companies are situated to take early action to deal with impacts of the Kyoto Protocol would clearly have an advantage over US emitters which wait for mandatory regulation because of their ability to transition in a “learn by doing” environment, when credits are relatively inexpensive. US companies would be well served by taking advantage of existing institutions to the inevitable regulatory changes ahead of the regulators.

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