

# Predicting U.S. Climate Change Laws: What the Pending Bills Tell Us

## Introduction and Background

Over the last few years, the Congress has paid increasing attention to climate change and global warming issues. After passing the relatively modest Energy Policy Act of 2005—which focused primarily on removing impediments and providing incentives for development of traditional energy resources, the Congress, after the Democratic takeover in 2006, enacted the Energy Independence and Security Act of 2007 imposing strong vehicle fuel efficiency mandates and promoting research and development of a relatively broad range of clean and efficient energy technologies. That legislation, however, fell considerably short of aspirations and the stage is now set for a more direct and comprehensive attack on the climate change problem. It is increasingly likely that we will see enactment of comprehensive climate change legislation in the next several years. There are several bills bouncing around the House and Senate reflecting a range of goals and strategies, but a majority of support seems to be building for the sort of “cap and trade” system offered by S. 2191, commonly known as The Lieberman-Warner Climate Security Act. Under this type of system, industry sectors responsible for GHG emissions would be required to conform a declining cap on such emissions with the opportunity to buy and sell credits to manage and/or offset excess production. This Senate has been reported out of committee and is predicted to reach the floor of the Senate in the early part of 2008. The House Committee Leadership has indicated intent to act within a similar time frame.

The policies and processes outlined in S. 2191 have the potential for significant impacts on the industries and institutions that develop and deliver energy resources to consumers, and ultimately, consumers themselves. Though significant revisions are likely before legislation like this becomes law, the concepts embodied in this bill, and the political energy propelling these concepts, will likely change the course of operations for many in the energy industry.

If the major thrust of the Senate bill is preserved, even in significant part, there are likely to be consequences: substantial fuel shifts from high greenhouse gas emitting fuel sources (e.g., coal) to low emitting fuel sources (e.g., natural gas and renewables); major federal funding for projects to develop and demonstrate “green” generation, conservation and control technologies; and, particularly in the near term, pressing needs for monitoring, assessment techniques and a complex set of incentives and adjustments calculated to mitigate impacts and encourage GHG reducing institutional changes.

In short, S. 2191 and its progeny have the potential to produce broad impacts on the U.S. and World economies. Assessment, prediction, and accommodation to this potential would appear to be advisable for investors, producers, users and others who may be affected. This memo provides a brief summary and preliminary analysis of the Senate bill with a view towards providing a predicate for further examination and potential planning and response.

## Overview

S. 2191 aims to reduce greenhouse gas emissions<sup>1</sup> by 70 percent, measured against 2005 levels, by 2050. The bill would utilize a national “cap and trade” system as the mechanism to accomplish this goal. That system, as it currently stands, would allocate a limited number of greenhouse gas emissions allowances to facilities covered under the legislation, beginning in 2012. These facilities would then be required to submit to EPA after the end of each calendar year, sufficient emission allowances and qualified domestic and/or international offsets to cover all greenhouse gases emitted in that year. In the early years of the program, a limited number of “free” allowances intended to reflect 2005 emission levels would be allocated and distributed among the covered facilities. A covered facility with emissions exceeding those allocated to it would be required to purchase additional allowances or offsets to cover the shortfall, “borrow” from the allocation pool for future years with steeply escalating repayment provisions, or pay very high penalties. Allowances could be purchased from the government through the auction process or acquired, subject to some limitations, from a “carbon market.”

Allowances available from the carbon market could include those distributed by or purchased from the government, domestic offset credit allowances created by third party emission reduction activities carefully defined in the bill, and international allowances created by emission reduction activities in countries which have GHG reduction programs equivalent to that of the U.S. The “free allowances” would phase out by 2031, the number of allowances auctioned would decline in annual stages until 2050 and the proportion of usable allowances available from domestic and international third parties would be limited.

A core objective of this complicated system is to encourage “GHG friendly” fuels and technologies through the imposition of high costs on high emitting fuels and sources. At the same time, however, the bill includes detailed and complex provisions to mitigate transitional impacts and protect a wide range of privileged uses.

## Phase-in and Implementation

S. 2191 would use “free allowances” to help covered facilities with significant barriers to compliance, assist retail energy providers to minimize the burden on consumers, and encourage early compliance. Certain entities in the energy industry would receive temporary relief, in order to phase in the necessary technology or switch to an alternate mode of production. During the early caps years (2012 through 2031), allowances would be allocated, in declining percentages among the following categories of covered facilities: Fossil Fuel Fired Electric Power Generating Facilities - (19% - 1% ); Energy Intensive Manufacturing Facilities (e.g., iron, steel, aluminum, pulp, paper, cement, chemicals, and other products listed by EPA) - (10%- 1%); and Other Entities that Produce or Import Petroleum-Based Fuel – (2%-.25%); Hydrofluorocarbon Producers and Importers (2%-.25%) And Rural Electric Cooperatives (1% through the end of 2030).

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<sup>1</sup> Carbon dioxide, methane, nitrous oxide, sulfur, hexafluoride and perfluorocarbons, with a separate declining cap for hydrofluorocarbons.

From 2012 to 2017, a declining number of allowances will go to “early actors” to reward covered facilities for actions taken since January 1, 1994 that reduce greenhouse gas emissions. The percentage of available allowances for early actors will decline from a high of 5% in 2012 to 1% in 2016.

In addition, states would receive up to 11 percent of the allowances to allay costs of compliance and consumer impacts, and encourage aspirations that exceed federal standards. For example, the bill rewards States with 2% of each year’s total allowances for States that adopt “decoupling” regulations for the State’s electric and natural gas utilities, and 1 percent for compliance with section 304(c)(3) of the Energy Conservation and Production Act, a provision that sets goals for energy efficiency in buildings.

Energy retailers would be granted similar allocations to mitigate economic impacts on low and middle income energy consumers, promote energy efficiency, and encourage best practices. These annual allowances would continue without reduction until 2050.

According to the legislation, early program funding would be provided by “early auction” of declining (5% to 1%) percentages of the allowances established for calendar years 2012 through 2016. After 2012, the percentage of annual allowances that will be auctioned by the federal government (instead of distributed free of charge) would rise from a low of 22.5% in 2012 to 70.5% in 2031.2031 and thereafter. The allocation of allowances reserved for “no cost” allocation and the allocation of allowances to be made available for auction add up to around 85% of the total cap amount in 2012. Because declining free allowances are offset by escalating auction allowances in subsequent years, this percentage remains basically constant. This suggests that the third party offset or credit market might make up around 15% of the total allowance market. (Covered facilities would be allowed to use qualified domestic offsets to meet up to 15% of allowance requirements in any year and an additional 15% can be satisfied with qualified international offsets.)

This system would interact with other provisions of the bill, detailed discussion of which is beyond the scope of this memo, to fundamentally retool the way energy related institutions and markets operate. These broad shifts, as do other occasions of major change, offer both challenges and opportunities. Observations about some of these follow.

**Carbon Traders and Other Carbon Market Participants** - A prospect of a mandated market for three to six billion carbon allowances commencing in 2012 should be a welcome one for carbon traders and others associated with that developing market. However, it is also clear that these opportunities will be accompanied by real challenges.

The definition of qualified domestic emission offsets appears relatively restrictive and seems likely to exclude a significant range of reduction or prevention approaches assumed to qualify in other contexts. The limits on international offsets<sup>4</sup> are also relatively strict as are requirements for verification and monitoring and potential liabilities for “reversals.” There will be at least

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<sup>2</sup> Particularly the requirement that the country in which the offsets are generated have in place a GHG emission control program equivalent to that of the United States.

eighteen months of uncertainty after passage of any climate change law, pending promulgation of implementing regulations on this subject. The auction/offsets/trading system will be extraordinarily complex and could strain the ability of government agencies and government chartered corporations to administer it – potentially prompting retreat to a carbon tax rather than a trading approach.

Finally, the power of the Carbon Market Efficiency Board to take action to mitigate excessive impacts of the domestic economy could result in sudden and unpredictable devaluation of offsets or allowances. In short, though the carbon market may have enormous potential, it may also entail commensurate risks. Potential players, and particularly those who seek the advantages available to informed early players, would be well advised to closely watch this legislative process and perhaps consider targeted participation.

**Coal Producers, Covered Facilities Burning Coal** - As noted above, a primary thrust of the Act would be to encourage a shift away from conventional coal fired energy generation and toward more GHG friendly technologies. It is also worthy of note, however, that the bill at least implicitly acknowledges the need for coal as a substantial part of the fuel mix and seeks to strongly encourage capture and geologic sequestration (meeting efficiency standards included in the bill and subject to periodic revision) as a means of meeting GHG goals while continuing to burn coal. Other coal related technologies, such as liquefaction or gasification not associated with capture and geologic sequestration would not seem to be similarly encouraged and indeed could be penalized. The bill's offset definition and use limitations could also pose impediments to traditional strategies involving offsets.

Other key issues for coal producers and burners include the development of monitoring and measurement methods that are accurate, efficient, economically achievable, reliable, and which adequately reflect efficiencies of plant operation; early allowance and offset strategies to minimize adverse effects of the 2012 caps; the interaction of sequestration technologies with emission control processes currently in place and many others. It goes without saying that the coal and coal fired industries will be paying close attention to these issues. The same might be advisable and profitable for investors and other participants in the businesses which service and support these critical industry sectors.

**Energy Intensive Manufacturing Facilities** – This group is situated similarly to the coal fired generators, but with perhaps more variability, less ability to fuel switch and more challenges in developing allocation methodologies and monitoring and verification schemes. This category of covered facility is probably less well defined and understood than the others and the effects on this category seem less predictable. One key issue which has been discussed in the House is the question of how to deal with importation of energy intensive products in order to put such products on equal footing with those of domestic manufacture. These complex issues are likely to be addressed generally in any final legislation but hammered out in detail through a relatively agonizing process of EPA regulation.

**Producers, Importers of Petroleum-based Fuels** – While the bill does not include specific operative requirements for fuel reformulation to reduce carbon emissions, the low free allowance allocations and related auction requirements provide strong incentives for reformulation beyond

that called for under the existing laws and executive order. The expense resulting from this requirement could enhance the competitive posture of biofuels and natural gas derived fuels.

**Natural Gas Producers, Processors, Importers** – Producers, processors and importers of natural gas are “covered facilities” subject to the requirement to obtain and annually submit allowances. Further, the bill would not appear to allow as offsets carbon emission reductions achieved by switching from higher to lower emitting fuels. Despite these apparent drawbacks, the consensus is that Natural Gas would be a major beneficiary of the program established under the bill. One Committee witness estimated that fuel switching under these programs would result in a near term increase in gas demand of at least six percent and that such an increase would escalate natural gas prices by more than 30 percent. These effects clearly should be of interest to investors in gas and gas import projects, gas traders and others associated with that industry.

**Nuclear Generation Facilities** -- Nuclear power plants do not produce GHG emissions, are not “covered facilities” and do not require allowances. Like the natural gas industry, however, the nuclear industry will become more competitive as the cost of GHG emissions from coal fired plants or, alternatively, of capture and geologic sequestration increases. Additionally, there seems to be a consensus among Committee members that nuclear power is an important element of the effort to achieve GHG emission reduction goals and some concern over whether the loan guarantee, tax credit and insurance incentives provided by the EPAct are sufficient to bring new nuclear facilities on soon enough to achieve the goals. There could be some willingness, as the legislation progresses, to address key impediments such as siting and waste storage.

**Renewable Energy, Low Emission Technologies, Sequestration, Conservation, Mitigation** - The proceeds of the auctions provided for in the bill (ranging in the tens of billions of dollars per year) could be utilized, in substantial part, to fund the development, demonstration and implementation of a broad range of technologies, ranging from efficient appliances to zero emission generation technologies to techniques for mitigating the environmental impacts of global warming. Progress in these programs would be relatively continuously reviewed, analyzed and reported on by various entities including the National Academy of Science (“NAS”), EPA and the President. This continuous review process and the implications of NAS and related government involvement should be a critical source of information for energy technology investors and other participants in the energy services sector.

Careful monitoring of, and potential participation in, this process could offer substantial benefits to players in the respective emerging technologies, as it seems that the potential exists for executive and legislative politics to continue to play a role in influencing the winners and losers among the renewable sectors. In addition, all participants and investors in renewable energy will continue to monitor Congressional treatment of the Production Tax Credit, which is currently set to expire at the end of 2008, but which we expect to be extended for a period of years in the near future.

## Forecast and Conclusion

Majority Leadership in both chambers have expressed a strong interest in moving S. 2191 to the floor early in 2008, and consider this bill a strong priority. However, most anticipate a significant challenge in passing the bill in its current form. Supporters need 60 votes to overturn a likely filibuster, and a presidential veto is a very real threat at the present time. If the recently enacted Energy Bill, the Energy Independence and Security Act of 2007, is a guide, both sides will negotiate a piece of legislation that each can accept, although inevitably weaker than the current bill.

Regardless of these challenges and what we expect to be a weaker bill, the policies, concepts, and approaches embodied in this year's bills are likely to significantly affect the way impacted entities conduct business. In particular, the level of regulatory oversight, monitoring, verification, and accounting that will be required under any legislative program to address these issues will be significant and complex. The eventual outcomes are likely to offer both challenges and opportunities to a broad cross-section of the energy industries, their customers, and a large number of external industries and investors. Attention to the House and Senate deliberations can provide both opportunities to correct misunderstandings or oversights before they become deeply ingrained and early access to information needed to adapt to or take advantage of any new regulatory regime.

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