

A corporation's need to participate in the carbon markets comes from image preservation – failure to participate may have an adverse impact on the company's bottom line as well as share price

Committing to carbon credits

Current legislation and regulatory measures to reduce atmospheric concentrations of greenhouse gases have their roots in climate change challenges presented by the United Nations Framework Convention on Climate Change and the Kyoto Protocol. Although the US has not signed the Kyoto Protocol, President Bush announced on 16 April, 2008 that he wants to stop the growth of greenhouse gas emissions by 2025 and is looking to the energy generation sector as a key driver of those cuts.

Part of the proposed strategy is to encourage lower greenhouse gas (GHG) emission power choices and investment in technologies that reduce emissions. This recent announcement adds impetus to the nascent GHG initiatives that are already underway within the US and provides additional incentives for the biofuels industry to seriously explore what opportunities are presented



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from the development of new markets for GHG reductions.

There are several state and regional initiatives already underway within the US; for example, the Regional Greenhouse Gas initiative (RGGI) and the California Climate Action Registry, among others.

The most prominent and robust voluntary market is represented by the Chicago Climate Exchange (CCX). The CCX is a member-based

exchange that provides a platform for the registration and trading of voluntary GHG reductions. The CCX was designed as a pilot programme to test how a domestic GHG cap and trade system might function.

Member companies make a legally binding commitment to reduce their net GHG emissions. This commitment can be met by directly reducing their own emissions or purchasing credits, called CFIs (carbon financial instruments), on the CCX from those members that make extra emissions reductions, or from third parties with verified offset projects.

This flexibility allows members to choose the option that achieves emissions reductions at the least economic cost while meeting their commitments. In addition, there are opportunities for US companies developing renewable energy projects that are REC (renewable energy credit) eligible. Under some circumstances, RECs

can be credited to the CCX if they are not sold into another crediting system.

There is a number of opportunities for biofuels producers and suppliers of certain feedstocks and raw materials to become involved in the US carbon market through the CCX. Generating credits, for example, through soil carbon sequestration, energy efficiency and fuel switching and RECs.

Eligible projects for soil carbon credits include continuous tillage and grass planting. Under the continuous tillage option, projects initiated on or after 1 January, 1999 are eligible for credits under a five year minimum contractual obligation. The number of credits assigned to each acre enrolled depends on the location of the land, ranging from 0.2 to 0.6 credits per acre. The minimum contract size on the CCX is 100 tonnes CO₂e (carbon dioxide equivalent). Individual carbon sequestration projects must be enrolled through a CCX-registered aggregator so that

credits can be pooled for sale on the exchange. A list of aggregators can be found on the CCX web site at www.chicagoclimatex.com. Once the aggregator sells credits to the CCX, projects must be independently verified. In addition, there is a 20% offset insurance provision and 20% of all credits created are placed into the CCX credit reserve pool.

As for biofuel producers, new protocols are being proposed and developed with the CCX to broaden the opportunities for producers to participate in the emerging US carbon market. One US ethanol producer has received credits on the CCX for switching its source of fuel and reducing its consumption of natural gas by over 50%.

Eligibility of such energy efficiency and fuel-switching projects are evaluated on a project-by-project basis by the CCX. Additional opportunities for some producers lie in the capture of co-produced CO₂. Presently, the costs of capture, transport and marketing have deterred some biofuel production plants from selling their CO₂.

A new revenue stream, however, from carbon credit production may offset some of these costs, making CO₂ capture a profitable co-product for a wider number of producers. At a minimum, being aware of the possibility that carbon-related value may exist within the biofuel production process warrants addressing carbon credit valuation and ownership allocation issues when

negotiating material project development agreements (i.e. CO₂ off-take agreements).

What legislation is currently being crafted?

Over the last year, several pieces of legislation proposing a cap and trade system for GHGs have been introduced in the US. The size of the cap differs among proposals, but most proposals favour a tightening of the cap over time. The caps proposed for the year 2050 range between 71%

Scheme (EU-ETS) differ dramatically. For example, in 2007, prices on the EU-ETS were in the range of \$20 to \$30 per credit while prices on the CCX were approximately \$1 (€0.6) to \$4 per credit. There is no trading across the two markets (which explains the price differential) because non-Kyoto countries cannot sell credits into the Kyoto system. In addition, the definition of what constitutes a credit is not uniform between the two

The range of prices being discovered in these markets and forecasted in previous studies provides the motivation for this article. Variations in the price of carbon credits can be explained by variations in factors affecting demand and supply conditions. We expect that future US credit prices will be higher under a mandatory cap and trade system because the demand for credits will increase dramatically from the level currently experienced within the CCX. Legislation favouring higher emissions reductions will result in higher credit prices.

The implications of low carbon credit prices on the CCX

Because prices are currently low, industries that can reduce emissions only at high cost may be well served to trade in the existing CCX. They will be able to purchase credits at lower prices than in Europe and potentially gain credit for early action from any future US legislation. Firms that can create credits at low cost may want to sell a small percentage into the market to gain market experience but may want to keep the remainder in anticipation of a rise in prices. Cap and trade systems also introduce fines for non-compliance with emissions reductions targets. It is unclear at this time what the level of fines may be in any future US scheme, however fines for non-compliance in the sulphur dioxide (acid rain) market are currently \$3,273 for each credit in deficit. Early

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below 2005 emissions levels and 80% below 1990 emissions levels. All of the proposals include language that seeks to reward firms engaged in an early effort to reduce emissions or firms engaged in offset projects. Although it is unclear what proposals the US legislation may include or draw upon, it is possible that early action, such as emissions reductions through the CCX, may be rewarded in future periods.

Prices

Market prices for carbon credits on the CCX and European Emissions Trading

markets. Estimates of future US market prices vary widely, from a few dollars to over \$300 per credit.

These estimates are affected by numerous assumptions used in the forecast models, including the level of emissions reduction eventually imposed (i.e. the cap), the growth in emissions due to economic activity, the technologies available to reduce energy use and sequester carbon, and the responsiveness of energy consumption and substitution to alternative energy sources under higher energy prices.

action at relatively low credit prices could help offset possible fines in the future.

Why participate?

In the absence of governmental mandates, one might question the reasoning behind corporate entities addressing climate change. Such issues, it can be argued, seem counter-productive and initially not in the best interest of the participant's corporate shareholders. The benefits of voluntarily engaging in carbon markets can pay dividends when the US adopts legislation proposing mandatory federal emissions reductions.

The benefits of early participation include (1) the ability to participate in and offer input to the formation of future regulatory regimes as well as the development of protocols that will enable biofuel producers to adopt recognised technologies and practices that lead to the production of carbon credits, (2) the ability to hone the corporation's participatory skill-set to move up the carbon market learning curve, (3) opportunity to examine in detail and reduce waste within the manufacturing supply chain; and (4) the goodwill and beneficial public relations generated from a business strategy that acknowledges carbon emissions.

Participation in the formalisation of US protocols

There are many pieces of proposed legislation that call for a federal cap and trade system for regulating GHG

emissions within the US. The design and implementation of any future system is likely to take into account information and lessons from current experiences in pilot markets. By participating in these markets, companies have the opportunity to provide feedback on their experiences and help shape future regulation.

Learning curve/market experience

Those entities that participate early in carbon markets will understand the sources and magnitude of their current GHG emissions,

as well as an awareness of the underlying asset and its value, how the company affects or is affected by the carbon markets and the likely costs of creating credits. Participation will force a company to look at its processes and identify its sources of GHGs so it can target the processes in which carbon reduction can be attained most efficiently. The development of tracking and verification processes

can take time; however, they are necessary for a company to substantiate its compliance with the policies and procedures of the market within which it participates. This knowledge, in light of inevitable formalisation of market protocols, will force a company to create the necessary internal monitoring processes and data trails to capture the appropriate data required to track its GHG. Such developments will be of value when a formal system is adopted in the US and regulated companies are required to report their GHG emissions. This will

require development of corporate GHG accounting and tracking systems.

Goodwill and beneficial public imaging

A corporation's need to participate in the carbon markets comes, at least from image preservation and/or enhancement in the eyes of its stakeholders. These stakeholders include, but are not limited to, customers, shareholders,

employees and affiliated nonprofit organisations.

The public is beginning to call for low carbon-emission products and corporate carbon neutrality. Pension funds and institutional investors have initiated shareholder proposals requesting companies to issue sustainability reports to shareholders. The failure to participate may have a direct adverse impact on the company's bottom line and share price.

Relatively speaking, the carbon market in the US is young. It is in an expansion phase, and in the coming years will grow at an exponential pace as US federal regulation of GHG emissions becomes a reality and the issues discussed above are addressed as the carbon market in the US becomes more formalised. The process of leaving the present population of sometimes inconsistent mandatory and voluntary regulations, policies, incentives and non-uniform commodities may try the patience of those participating.

However, persistence should payoff and, in addition to ensuring regulatory compliance in an efficient manner, the early movers will likely find themselves preserving otherwise lost opportunities while creating new and profitable deal flow. ●

For more information:

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