How your company can prepare to manage carbon as an asset*

Table of contents

June 2008

The heart of the matter

US emissions legislation is on its way. Are you ready?

Public debate over climate change increases in the US on a daily basis. The pressure on corporations to go green is relentless. Already, a patchwork of regulatory standards and initiatives exists in response to growing public pressure. Although a climate change bill was defeated in the US Senate in June 2008, we continue to believe it is inevitable that national legislation on greenhouse gas (GhG) emissions will be put into effect after the US presidential elections. This could create an enormous shift in the marketplace, which will affect many aspects of the economy. Certainly those companies with the greatest exposure to change will be those with the largest carbon footprints, in particular the utilities, energy, and industrial products sectors.

The most sweeping regulatory options being discussed in Congress include the implementation of a GhG cap-and-trade program similar to the one being practiced in the European Union (EU). Since January 1, 2005, utilities, energy, and industrial product companies that operate in the EU have been required to participate in the EU carbon trading program.

A carbon emissions cap-and-trade system in the US will have direct impact on a company's financial statements. In order to have a measure of control over what is to come, all companies need to know the measure of their carbon footprint and understand how to manage carbon as an asset—not tomorrow, but today. They need to know what will be financially material and what they will need to disclose.

An in-depth discussion

How potential carbon regulations may affect your company.

What is currently setting the stage for carbon trading?

Laws and regulations (current and proposed)

- The US has no federal regulations, but numerous bills have been introduced in Congress. The bill receiving the most attention is the Boxer-Lieberman-Warner bill, which would have placed mandatory caps on greenhouse emissions for power plants, industry, and oil refineries, and require the implementation of a cap-and-trade program. This bill was recently defeated in the US Senate; however, both US presidential candidates support cap-and-trade programs.
- California's Global Warming Solutions Act (CGWSA) and the Northeastern and Mid-Atlantic states' Regional Greenhouse Gas Initiative (RGGI) are among the most recent of the state laws and regional initiatives to address climate change.
- The Kyoto Protocol (which has not been ratified by the US) is valid through 2012, with some sequel likely. The EU's Emission Trading Scheme has had an impact in the EU to date but is expected to have an even more significant impact in the future.

Initiatives

- The United States Climate Action Partnership, the Regional Greenhouse Gas Initiative, and California Climate Action Registry (CCAR) are among the initiatives with specific drivers, geographies, goals, and reporting expectations that impact industrial products companies.
- There were 43 climate-related shareholder resolutions filed with US companies during 2007. Of these, 15 led to positive actions by businesses including ConocoPhillips, Wells Fargo, and Hartford Insurance. Shareholders withdrew their resolutions after the companies made their climate-related commitments. Shareholder resolutions are expected to increase in 2008.

Nonfinancial reporting frameworks

- The Greenhouse Gas Protocol, CCAR's Reporting Protocol, and others are establishing expectations of reporting on companies' performance and goals.
- The Carbon Disclosure Project aims to create a lasting relationship between shareholders and corporations regarding climate change's implications for shareholder value and commercial operations.
- A Securities and Exchange Commission (SEC) petition by a group of investors and a request made by the US Senate Committee on Banking, Housing, and Urban Affairs to the SEC both call for increased disclosure related to climate change risk in corporate filings.
- Three large financial institutions prepared "The Carbon Principles," which are guidelines for advisors and lenders to evaluate and address carbon risks in the financing of electric power projects.

Carbon trading

- It is estimated that the US could be home to a $1 trillion carbon emissions cap-and-trade market by 2020.[1]
- Multinational investment banks are on the move to develop brokerage capabilities to handle business in carbon trading activities. Cantor Fitzgerald combined its businesses in pollution and carbon brokering into a single entity in anticipation of increased activity in the US carbon markets. Morgan Stanley and RNK Capital LLC are preparing to trade EU carbon credits after 2012. In addition, Citigroup Inc. and Cargill purchased a minority stake in Sindicatum Carbon Capital Holdings Limited, a developer of greenhouse gas abatement technologies, in expectation of future carbon trading.

---

[1] New Carbon Finance press release, "Economic Researchers Predict $1 Trillion U.S. Carbon Trading Market by 2020" (February 14, 2008): www.newcarbonfinance.com/download.php?n=New_Carbon_Finance_Press_Release_US_Carbon_Market2.pdf&f=fileName&t=NCF_downloads.

Exhibit 1: Emissions legislation

Current and proposed emissions legislation expected to affect utilities, energy, and industrial products companies

Curtailment initiative	Origins and start date	Nature of program	Regional coverage	IP sector coverage	Objective/ target
Existing					
Kyoto Protocol, International Emissions Trading	International, 1997	Cap-and-trade	International	All GhG emissions	Supports Kyoto Protocol GhG emissions reduction commitments.
European Union Emission Trading Scheme (EU ETS)	Europe, 2005	Cap-and-trade	Multinational	Carbon-intensive sectors, all GhG gases	Supports Burden-Sharing Agreement and Kyoto Protocol GhG emissions reduction commitments.
Enacted					
California Global Warming Solutions Act (CGWSA)	United States, 2008	Cap-and-trade	State	Carbon-intensive sectors	California's GhG emissions will be capped at 1990 levels—360 million metric tons of carbon dioxide equivalents ("MMt CO_2e")—by 2020. The most recent estimate of the state's GhG emissions, made in 2004, was 410 MMt CO_2e.
Regional Greenhouse Gas Initiative (RGGI)	United States, 2009	Cap-and-trade	Regional/ multistate	Fossil fuel power sector, CO_2e emissions	RGGI sets a cap on emissions at current levels (roughly 121 MMt CO_2e) between 2009 and 2015. Cap then decreases by 10% through 2019, with 35% net emissions reductions foreseen.
Proposed					
Boxer-Lieberman-Warner America's Climate Security Act of 2007	United States, Unknown	Cap-and-trade	United States	Carbon-intensive sectors	The bill aims at reducing 2050 carbon emissions to one-third of their 2004 level. Adoption would lead to mandatory caps on GhG emissions for power plants, industry, and oil refineries.

How a GhG cap-and-trade program might work in the US

As generally described in the Financial Accounting Standards Board (FASB) Emerging Issues Task Force EITF Abstract, Issue No. 03-14, ("Participants' Accounting for Emissions Allowances under a 'Cap-and-Trade' Program"), a US cap-and-trade program would involve a governmental agency establishing a target or cap for the amount of GhG emissions by industry. Based on target GhG emissions, the government would then allocate emissions allowances, giving companies the right to emit a specified amount of GhG into the atmosphere. A company could be allocated emissions allowances free of charge, or they might be required to purchase allowances auctioned off by the government.

Cap-and-trade programs operate over a compliance period, and emissions allowances are allocated to the participants at the beginning of the compliance period. During the period, participants could buy or sell allowances directly with other participants or, depending on market sophistication, through a broker or on an exchange.

At the end of the compliance period, each participant would be required to deliver emissions allowances equal to its actual emissions. If a participant failed to deliver the required allowances, it could be required to pay fines and it might receive a smaller allocation of emissions allowances in the future.

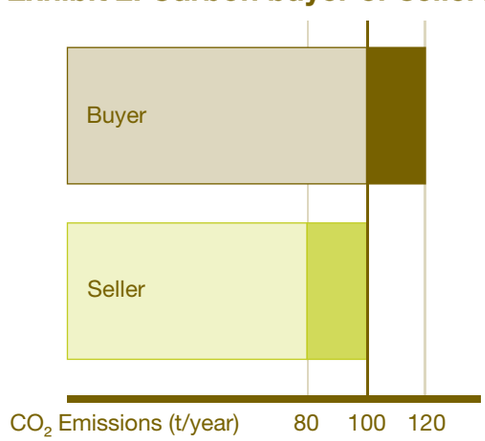
During a compliance period, a participant has three options:

1. It may emit GhG to the level of its allocated allowances.
2. It may emit GhG to a lower level than is represented by the allocated allowances, and it may sell or bank it's unused allowances.
3. It may emit GhG to a higher level than is represented by the allocated allowances and either buy additional allowances from other companies or pay a penalty.

Exhibit 2 introduces the concept of buyer and seller if the GhG emissions cap was established at 100 metric tons of carbon dioxide.

Though companies not meeting their commitments are able to "buy" compliance, the price may be steep. The higher the cost, the more pressure companies feel to consider other alternatives. These could include using energy more efficiently, switching fuel, and researching and promoting the development of alternative energy sources or manufacturing processes that create low or no emissions.[2]

Exhibit 2: Carbon buyer or seller?

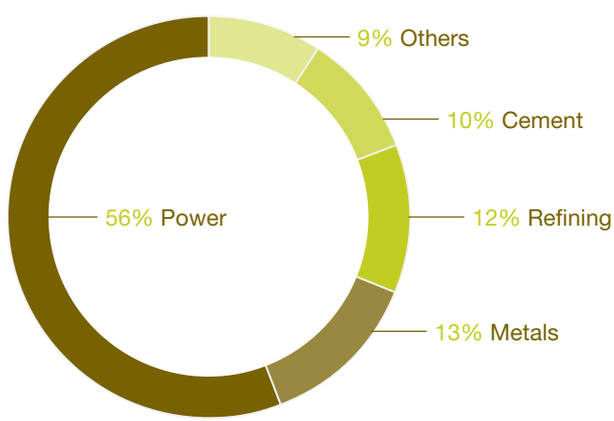


[2] United Nations Framework Convention on Climate Change (February 29, 2008): http://unfccc.int/essential_background/items/2877.php.

Background on the European cap-and-trade experience

Since the signing of the Kyoto Protocol, companies operating in Europe have become active in GhG emissions allowance trading via the European Union Emission Trading Scheme (EU ETS), a cap-and-trade system that went into effect on January 1, 2005. Under the EU ETS, the EU member states have set limits on GhG emissions during compliance periods. The distribution of the EU emissions caps by sector during the first compliance period (2005–2007) is noted in Exhibit 3.

Exhibit 3: EU carbon emissions cap allocation by sector



During the first EU ETS compliance period, emissions allowances were overallocated by the EU member states, which led to a surplus for many companies. As a result, companies had no real incentive to buy credits or cut emissions. When this situation became known, the price of emissions allowances plummeted from more than €30 per credit to less than €10. Since then, the carbon trading market has experienced frequent bouts of volatility—a situation likely to continue as the plan enters its second phase, which runs to 2012.

It is expected that the second phase of the EU ETS will further widen the coverage of the program. The 2008–2012 National Allocation Plans currently appear quite strict and will significantly reduce the overall amount of GhG that can be emitted based on the EU's Kyoto targets. Utility, energy, and industrial products companies with European subsidiaries will face the greatest impact in financial reporting in the near future.

The European Union's Emission Trading Scheme is expected to have a more significant impact in the future.

Overview of potential accounting and tax issues

Generally accepted accounting principles specifically related to GhG emissions cap-and-trade activities do not yet exist in the US. A preliminary discussion prepared by the FASB's Emerging Issues Task Force (EITF) in November 2003 was never issued as a standard because no conclusions were reached. Until further information is provided by FASB and the International Accounting Standards Board (IASB), we advise companies to consider the industry-based guidelines outlined in this whitepaper, which are based on the historical practices followed by many US public utilities companies in accounting for emissions allowances cap-and-trade activities involving sulfur dioxide (SO_2) and nitrogen oxides (NO_x).

Although we expect that the scope of regulation on carbon emissions will be far larger than what many companies faced with the passage of the Clean Air Act in 1990, we believe the guidance provided in the following pages will assist companies in gaining an initial understanding of the potential implications of carbon trading on their financial statements. FASB Statement of Financial Accounting Standards (FAS) No. 142 ("Goodwill and Other Intangible Assets") and EITF Issue No. 03-14 ("Participants' Accounting for Emissions Allowances under a 'Cap-and-Trade' Program") were also considered in preparing the analysis in this section.

It should be noted that the IASB's International Financial Reporting Interpretations Committee (IFRIC) issued IFRIC 3, *Emission Rights*, to address the accounting for emissions allowances. This standard was ultimately withdrawn in June 2005 due to a public response to unsatisfactory measurement and reporting mismatches. Generally, the approach required companies to recognize a liability at fair value as pollution occurs, without regard to emissions allowances currently held. Emissions allowances would also be recorded at fair value. This approach can create income statement volatility due to measurement differences between the fair value of the emissions allowance and the emissions liability. The accounting model described in IFRIC 3 should not be applied by companies applying US generally accepted accounting principles.

What is the first step in preparing for a GhG cap-and-trade program?

It is imperative to know your carbon footprint. You need to identify the sources, types, and magnitude of GhG emissions your company produces and compare them with those of your industry peers. As outlined in *The Greenhouse Gas Protocol*,[3] developing a measure of your carbon footprint includes addressing the following:

- Setting organizational boundaries: This relates to determining what approach to take when accounting for emissions from joint ventures, subsidiaries, and other organizations.
- Setting operational boundaries: Companies need to determine the scope of emissions they will include in their reporting. *The GhG Protocol* divides these into Scope 1 (direct emissions), Scope 2 (indirect emissions, such as from purchased electricity), and Scope 3 (other indirect emissions, accrued via employee travel, waste, contractor vehicles, product use, etc.).
- Determining a base year for carbon footprint reporting: This includes determining the timing of when a company should recalculate its emissions due to business changes—e.g., acquisitions or divestitures, new calculation methodologies, etc.
- Identifying and calculating GhG emissions: This covers inventorying emissions sources, defining calculation methods and approaches, collecting data, selecting emissions factors, applying the calculation methods, and compiling the emissions data at the corporate level.
- Addressing footprint quality: Companies should address issues such as quality/control and management review, and implementation of robust processes and controls for routine data collection and compilation.

---

[3] World Resources Institute and World Business Council for Sustainable Development, *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (March 2004): www.ghgprotocol.org/files/ghg-protocol-revised.pdf.

You should also consider conducting an audit that includes all direct and indirect carbon emissions. You need to understand where your best opportunities to reduce emissions may lie, and you need to determine if your role in carbon trading will be that of net buyer or seller.

What is the appropriate liability recognition model for emissions obligations?

Once emissions laws have been established or contractual commitments have been entered into, we believe that a GhG emissions obligation (a liability) is recognized only when actual GhG emissions levels are greater than the GhG emissions allowances a company holds (an asset). This approach requires careful accounting of both the expected GhG emissions levels (i.e., your carbon footprint) and the emissions allowances held. Although emissions laws have not been established in the US, some companies have entered into voluntary but legally binding commitments with various third parties (including new US GhG exchanges such as the Green Exchange and Chicago Climate Exchange) to meet annual GhG emissions targets. Such contractual commitments, along with an inventory of emissions allowances held, should be carefully reviewed by management, legal counsel, and auditors to determine whether to record obligations for emissions.

Applying the guidance described above using a discrete interim approach could result in potential volatility during interim periods. For example, a company may hold sufficient emissions allowances to offset its expected GhG emissions for the first three quarters of a given fiscal year, but must begin accruing a liability (cost of purchasing emissions allowances on the open market) in the fourth quarter. This approach leads to an expense pattern that backloads expense, even though the company's actual GhG emissions levels may have been constant throughout the year. PricewaterhouseCoopers also supports the use of an annualized approach that would spread the expense throughout the year. PricewaterhouseCoopers believes that either the discrete interim or the annualized approach are acceptable as long as the accounting policy is applied consistently.

What is the preferable classification of emissions allowances on the balance sheet?

PricewaterhouseCoopers believes that emissions allowances meet the definition of intangible assets as defined by FAS 142. These intangible assets are either finite or indefinite-lived based on the regulations of each state or region, or the terms of the individual contractual commitments. If a federal cap-and-trade program similar to the EU ETS is adopted in the US, GhG emissions allowances will only be usable during a specified compliance period. Because there are currently no final federal and state laws establishing an obligation for emissions, an emissions allowance asset position will be typical for the next several years for companies purchasing emissions allowances. In fact, some companies are currently purchasing emissions allowances to prepare for future legislation.

Due to the lack of definitive guidance for emissions allowances, some companies have classified emissions allowances as inventory. PricewaterhouseCoopers does not believe this treatment is preferable; however, due to the lack of authoritative guidance, we have accepted this classification.

Are emissions allowances considered a derivative?

No. As indicated in EITF Issue Summary No. 03-14, the FASB staff believes emissions allowances are not derivatives. An emissions allowance is considered an intangible asset, as opposed to a contractual arrangement to deliver an asset. As such, there is no underlying as defined by FAS 133, "Accounting for Derivatives Instruments and Hedging Activities."

As GhG emissions cap-and-trade programs and legislation continue to evolve, companies should be mindful of their accounting for forward or future contracts for delivery of emissions allowances. PricewaterhouseCoopers believes it is likely that a forward or futures contract for the delivery of emissions allowances would qualify as a derivative, as typically the forward or futures contract is a financial instrument that would meet the criteria of FAS 133.

How should emissions allowances allocated by the government or purchased with cash be recorded and subsequently remeasured?

Emissions allowances should be recorded at historical cost. Thus, emissions allowances that are provided by the government should be recorded at zero, which is consistent with the historical practice followed by many US public utility companies. Emissions allowances that are purchased with cash (on a national exchange or from a government auction) should be recorded at the price paid.

How should companies report nonmonetary exchanges of emissions allowances?

In current practice, US public utility companies sometimes enter into exchanges of emissions allowances, which are commonly referred to as "vintage year swaps." For instance, a company that has an excess of allowances for a given year or compliance period might exchange them with another company for allowances from a year or period when it experienced a shortage. Under FAS 153, "Exchanges of Nonmonetary Assets," exchanges of intangible assets are generally recorded at fair value.[4] The potential step-up in basis may result in income statement volatility between periods as well as the possibility of impairment losses in future periods. Emissions allowances accounted for as inventory are outside the scope of FAS 153.

How should companies account for the sale of emissions allowances?

The sale of emissions allowances for cash or other monetary consideration usually results in a gain. We believe it is appropriate to record these gains as a reduction of cost of goods sold or as other income, similar to the manner in which gains and losses on operating assets are typically classified.

---

[4] Under FAS 153, exchanges of nonmonetary assets that lack commercial substance are reported at the historical cost of the asset surrendered. Paragraph 21 of FAS 153 states that a transaction has commercial substance if the entity's future cash flows are expected to significantly change as a result of the exchange. In practice, most nonmonetary exchanges have commercial substance.

Should emissions allowances be subject to impairment testing?

Yes. We believe that the guidance provided in FAS No. 142 and FAS No. 144 ("Accounting for the Impairment or Disposal of Long-Lived Assets") should be used to perform impairment tests on emissions allowances accounted for as indefinite-lived and finite intangible assets, respectively. Emissions allowances accounted for as inventory are subject to the impairment test described in Accounting Research Bulletin (ARB) 43, "Restatement and Revision of Accounting Research Bulletins," chapter 4: "Inventory Pricing."

As noted earlier, some companies are purchasing emissions allowances to prepare for future legislation. These companies need to be mindful of potential impairments of these assets if the enacted legislation does not permit the carryforward of these emissions allowances to future compliance periods.

Is there any required/recommended disclosure of emissions trading programs or emissions allowances within a company's financial statements?

Yes, if material. As required by SEC Regulation S-K, a company must fully and fairly disclose facts about its performance and operations material to a reasonable shareholder's investment decision. Recent scientific, legal, and regulatory changes provide evidence that the risks and opportunities many organizations face in connection with climate change will potentially fall within the category of material information that is required to be disclosed in corporate filings. Additionally, as information is finalized about a company's carbon footprint or the nature and amount of emissions allowances held (which may have an impact on future periods), and if the amounts are considered material, management should consider disclosing this information.

Is there any new accounting and disclosure guidance expected from the FASB or IASB in this area?

At a February 21, 2007, meeting, the FASB decided to add a comprehensive project on accounting for emissions allowances to its agenda. This project is expected to address the types of emissions allowance schemes that should be within the scope of the project. The FASB's decision on scope is likely to affect the accounting questions which the FASB would address for emissions allowance asset recognition, measurement and impairment, cost allocation, liability recognition, presentation, and disclosures.[5]

At the IASB's September 2005 meeting, three months after its decision to withdraw IFRIC 3, the IASB added the topic of emissions trading programs to its agenda, deciding it should address the topic in a more comprehensive way. The new project is being conducted jointly with the FASB. In December 2007, the IASB activated work on the Emissions Trading Schemes project. The IASB decided to limit the scope of the project to the issues that arise in accounting for emissions trading schemes, rather than addressing broadly the accounting for all government grants. The estimated project completion date is yet to be determined.[6]

---

[5] http/www.fasb.org/project/emission_allowances.shtml.
[6] International Accounting Standards Board, "Emissions Trading Schemes" (May 1, 2008): www.iasb.org/Current+Projects/IASB+Projects/Emission+Trading+Schemes/Emission+Trading+Schemes.htm.

What about income tax implications of these programs?

Many US-based multinational corporations already face questions about the tax treatment of emissions allowances. While many have taken supportable positions that transactions in carbon emission rights should not create subpart F income—because carbon emission rights are "commodities" or because they are operating intangibles—the technical support for either conclusion is unclear. Although some companies have considered asking the IRS for guidance on this point, no public guidance has yet been issued.

Similarly, hedge funds and other potential investors in carbon emission rights have formed their own views on whether carbon emission rights can be treated as "commodities," thus allowing favorable treatment for foreign investors under the US "trading safe harbor." Among the issues to consider are: (1) the strength of the analogy between carbon emission rights and traditional traded commodities, and (2) the differences among various types of carbon emission rights.

PricewaterhouseCoopers sees rapidly increasing interest in carbon trading from both industrial companies and investors, and we anticipate that the IRS will address the US tax treatment of carbon emission rights as the carbon markets evolve in the US and the EU.

Although proposed US legislation on carbon emissions focuses on cap-and-trade programs, there is also public discussion of a tax on carbon output. Proponents of a carbon tax say it is a more cost-effective way to limit carbon and that it acts as a shield against manipulation and speculation by special interests. In general, economists favor a carbon tax while most public officials say cap-and-trade is the only viable approach to reducing carbon emissions.

Mergers and acquisitions on the horizon

PricewaterhouseCoopers believes it likely that the valuations of companies in energy and energy-intensive industrial products companies will reflect the impact of the carbon markets. As the carbon markets continue to grow, the carbon profile of assets will emerge as a key factor in valuations and eventually may trigger M&A activity itself.

As a case in point, an industrial products company recently announced it would buy another energy company as a way to address climate change, via the target company's ability to generate emissions allowances that could be used to offset the acquirer's pollutants. In public statements regarding the proposed buyout, senior management for the buyer noted that carbon constraints are likely to become part of US energy regulation and, as a result, the target's carbon assets would become valuable to the acquirer. We anticipate the pace of climate-related M&A to increase as climate change becomes an increasingly important factor in company valuations.

The time to prepare is now.

Climate change has moved to the forefront as an urgent business issue. As a result, we are in the midst of a major market transition. Caps on carbon emissions will impact all sectors of the economy, and particularly those most reliant on energy. It is important to examine your own carbon footprint, look for ways to reduce it, and understand what the implications of a carbon trading system will be to your core business.

A carbon emissions cap-and-trade system in the US will directly impact companies' financial statements. In order to have a measure of control over what is to come, all companies—and particularly those in utilities, energy, and industrial products—will need to understand how to manage carbon as an asset. They will need to know what will be material and what they will need to disclose.

The time to prepare for regulation on carbon emissions and carbon trading is now.

pwc.com

To have a deeper conversation about how this subject may affect your business, please contact:

Doug Dean
US Metals Leader
412.355.8095
douglas.k.dean@us.pwc.com

Fred Cohen
US Climate Change Services Leader
646.471.8252
fred.cohen@us.pwc.com

Matthew Haskins
Washington National Tax Service Director
202.414.1570
matthew.haskins@us.pwc.com

Tom Kalinosky
US Environmental Accounting Advisory
860.241.7418
tom.kalinosky@us.pwc.com

Robert Dennis
US Lead Partner, Sustainability
713.356.5600
robert.w.dennis@us.pwc.com

Nick Shufro
US Climate Change Service
860.241.7444
nick.shufro@us.pwc.com

Dean Simone
Industrial Products Assurance Leader
267.330.2070
dean.c.simone@us.pwc.com

Casey Herman
Utilities Assurance Leader
312.298.4462
michael.a.herman@us.pwc.com

Rick Hanna
Automotive Assurance Leader
313.248.9211
richard.hanna@us.pwc.com

Martha Carnes
Energy Assurance Leader
713.356.6504
martha.z.carnes@us.pwc.com

This publication is printed on Mohawk Options PC. It is a Forest Stewardship Council (FSC) certified stock using 100% post-consumer waste (PCW) fiber and manufactured with renewable, non-polluting, wind-generated electricity.

Recycled paper