

10 Minutes on Monetizing Carbon*

What you need to know about emerging topics essential to your business. Brought to you by PricewaterhouseCoopers.

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Preparing for a price on carbon emissions

Highlights:

- The US Environmental Protection Agency (EPA) has taken initial steps to regulate greenhouse gas emissions—an objective it can push forward even as Congress continues to work on a legislative approach.
- Broader reduction of GHGs would affect all companies—either through direct monetization of their emissions via potential EPA fines or a cap-and-trade system, or indirectly, in how their energy will be sourced, delivered, and priced.
- Government incentives for private-sector investment are meant to help drive the transition to low-carbon alternatives.

Lowering carbon emissions has become a business imperative, one that companies are staying focused on despite the weakened economy. As a result, they want to know what the US policy will be for reducing greenhouse gas (GHG) emissions. Investors want to know as well.

The picture is becoming clearer for the private sector now that the EPA has authority to regulate GHG emissions and Congress is working on a climate and energy package. At the heart of the proposed Congressional package is a cap-and-trade system, accompanied by clean-energy provisions and government incentives for investing in energy efficiency and fossil fuel alternatives.

Some business leaders and investors are looking beyond the costs of reducing carbon emissions to eye the opportunities—setting their sights on new markets that are likely to emerge with the development of GHG-focused technologies and services.

Mandated reduction of carbon emissions will not affect all industries and companies equally

1. Oil, natural gas, utilities, transportation, industrial, and construction sectors are among the largest sources of GHG emissions. Heavy-emitting companies in those sectors have the greatest likelihood of being regulated.
2. Heavy-emitting companies will need to replace or upgrade facilities and operations with new technology in order to hit long-range reduction targets.
3. The impact on particular industries and companies depends on a number of factors—the availability and cost of new technologies for mitigating carbon emissions, the number of pollution allowances granted to a given industry, and whether a company's international competitors operate under similar emissions restrictions.
4. Even for companies that don't emit large amounts of GHGs, the pricing of carbon emissions poses risks via their global supply chains.

At a glance

Key challenges of GHG regulation

- Meeting tighter standards for fuel efficiency
- Prompting private-sector investment in practical sources of alternative energy and in operational changes that will improve energy efficiency and reduce emissions
- Grappling with a disproportionate regulatory burden for some economic sectors, regions, and individual companies
- Quickly establishing emissions-reporting systems and instituting internal controls for monitoring the reduction of those emissions
- Preventing cross-border "carbon leakage"

Business impacts/opportunities

- Emissions reduction will increase costs for businesses, but it is also likely to drive innovation.
- Innovation is expected to be spurred by tax incentives, government-guaranteed loans, and federal grants.
- Some companies and industries could have a higher level of risk post-regulation, potentially making them less attractive to lenders and changing the value of key assets.
- IT companies might benefit from the new regulation by devising software tailored to businesses that must comply with the EPA's reporting requirements.
- Manufacturing companies may be tempted to move operations to jurisdictions where carbon is unregulated.

Regulatory wheels in motion

The federal government is debating mandatory targets for reducing carbon emissions, as well as the means of achieving and enforcing those targets. The approach currently contemplated by Congress is a national cap-and-trade system. Absent Congressional action, the EPA may proceed unilaterally by setting limits on GHG output and fining companies that don't comply.

The command-and-control approach

The EPA has legal authority to regulate GHGs now that those gases have been deemed pollutants under the Clean Air Act. Starting in 2010, heavy emitters (primarily the owners of the approximately 10,000 facilities that emit an estimated 85 percent of US GHGs) will have to measure and report their GHG output. The first reports are due in 2011 and will establish a baseline for regulation.

In the near term, the EPA intends to require that owners of large stationary sources (e.g., power plants, industrial facilities) prove they will be using the best available emissions-control technologies when upgrading or building new facilities—or else be denied permits for those projects. Compliance could be challenging for companies, especially those needing to replace infrastructure in the near future; many of the

technologies for reducing emissions do not, at present, appear economically feasible to businesses.

The market-mechanism approach

As the EPA moves forward, Congress is considering comprehensive climate and energy legislation. One element of the package is a cap-and-trade system, which would give companies flexibility in how they meet their reduction obligations.

Cap-and-trade systems limit companies' GHG output, with the emissions ceiling (cap) gradually lowering. Carbon allowances issued by the government can be bought, sold (traded), or banked as companies see fit. Currently, regional cap-and-trade systems are either in place or under development across 23 states.

The Congressional package is also designed to steer private capital toward projects that promote fuel efficiency and the development of alternative energy sources/delivery. Government assistance and incentives would be provided over multiple years (rather than in short bursts), making lenders less inclined to view long-term projects such as renewable-energy development or carbon capture and storage as too risky to finance.

More than just a price per ton

For many businesses, carbon will suddenly have a value where before it had none—whether in the form of fines that the EPA could potentially levy for noncompliance, or as a result of either federal or regional cap-and-trade systems. Carbon will also become a factor in key business decisions as companies determine how to meet reduction targets without disrupting core operations or compromising growth strategies.

Companies can start weighing their options now

Although federal targets for GHG reduction have yet to be established, companies can get a sense of what they'll be, based on proposed legislation. In the meantime, the EPA may step in and set targets of its own. Businesses should therefore begin contemplating a range of methods for operating efficiently under emissions restrictions.

Electric-generation companies may have to shift production from coal to natural gas and/or nuclear energy in order to meet reduction targets. Industrial companies, meanwhile, may have to retrofit their facilities to minimize energy use and rely more on low-carbon technology. Businesses may also decide to move operations closer to clean-energy utilities,

to cut down the cost of power delivery. Such measures cannot be completed overnight—a fact investors want to see adequately reflected in business forecasts.

Some companies may also need to consider how long-lived projects they initiate now could be affected by GHG targets decades out. For instance, energy producers would have to be sure that new power plants would not compromise their ability to reach sliding reduction targets over a facility's 40-year lifespan. But at present few technologies are capable of reducing emissions from power plants or other heavy emitters to the degree currently envisioned by Congress, and of such technologies that exist, most are not readily available or scalable.

Investors and lenders want a clear GHG policy

Investors and lenders are interested in funding the development of the necessary technology. Once a solid federal GHG policy is in place, via the EPA or Congress, the private sector can better assess the risks associated with investing in carbon-reducing projects and the companies pursuing those initiatives. At that point, capital for such projects should become both easier and less expensive to obtain.

Companies are seeing opportunities in a low-carbon future

In anticipation of broader GHG regulation, investors and businesses are eyeing new types of partners, investment vehicles, and acquisition targets. The federal government is providing financial incentives to both these constituencies, which could drive collaborative low-carbon solutions.

New partnerships

Despite the economic downturn, companies have increasingly viewed managing GHGs as a key business issue, not only in anticipation of federal regulation, but also in response to stakeholder concerns. The past year alone has seen the number of S&P 500 companies that report GHG-reduction targets to the Carbon Disclosure Project rise by 20 percentage points.

Various companies are going beyond setting reduction targets for themselves and have begun forming new partnerships—including innovative cross-industry alliances—to better pursue the market opportunities forming around GHG reduction. Utility companies, for instance, have begun matching their infrastructure-upgrade needs with the capabilities of technology companies that can design and install smart grids. Alliances geared toward GHG reduction can also help companies minimize reputational risk and increase customer share among environmentally conscientious consumers.

Government-spurred investment

Many businesses believe they will have ready support from the investment community once credible and reliable long-term policies for emissions reduction and energy security are in place. Already, a group of 181 institutional investors managing more than \$13 trillion in assets has publicly asked Congress to help foster a more stable environment for long-term investing by setting the market direction through the creation of a cap-and-trade system.

Meanwhile, the US government has devoted \$117 billion of stimulus money to increasing energy efficiency and developing GHG-reducing technologies. More federal funding is apt to come once GHG regulation is firmly established. Other countries are taking a similar approach—which is good news for US multinationals that are in a position to take advantage of government incentives in the countries where they operate.

At the same time, US venture capitalist funding of clean technology is on the uptick, a sign that the private sector is increasingly seeing long-term market opportunities in reducing emissions here in the United States.

How your company can prepare

Now is the right time for companies to start establishing a clear approach to dealing with the various effects of a price on carbon emissions.

Understand which aspects of emissions reduction could make the company and its supply chain vulnerable:

- Direct regulation: That includes GHG caps, tighter standards for energy and fuel efficiency, and the potential requirement to increase the use of renewable energy sources.
- Indirect effects of regulation: That could include rising commodity prices for companies (the cost of which may be passed on to consumers), and a competitive disadvantage with unregulated peers elsewhere in the world.
- Long-term need to replace logistical processes, equipment, or basic infrastructure (e.g., commercial airline fleets, power plants)
- Competitive threats from companies or industries that are bringing to the market products/services that could

render obsolete (or dramatically reduce demand for) regulated businesses' products/services

Ensure correct emissions numbers:

Each company should understand what level of measurement, reporting, and controls are right for its business and tolerance for risk (e.g., reputational risk, financing risk).

Assess material risks that might result from GHGs or their regulation:

In keeping with the Securities and Exchange Commission's requirement that companies disclose material risks, public companies will need to carefully assess the potential risks posed by their GHG emissions and other climate change factors. Stakeholders are increasingly paying attention to disclosures in these areas.

Optimize monies that are or might become available as a result of federal and/or state incentives:

Businesses should assess which among the current and anticipated tax incentives, government grants, and government-guaranteed loans will help them keep pace with potential emissions-reduction targets and other regulatory requirements.

Upcoming 10Minutes topics

Creating more value from HR

The link between effectively deployed talent and business results has never been more apparent than in the past year. Strong leadership enabled many firms to perform better than their competitors. 10Minutes discusses ways that companies can improve their approach to recruiting and managing pivotal employees by better aligning HR models to the strategic goals of the business.

The changing face of financial reporting

Standard setters have proposed fundamentally changing the way public companies gather and display financial data for investors and the general public. While some welcome the changes, critics say the proposal is costly and, in large part, unnecessary. 10Minutes discusses the pros and cons.

Global infrastructure

As part of their plans to stimulate their economies, many countries, including China, Mexico, Australia, and the US, have announced their intention to step up spending on roads, rail, and other projects. The renewed focus on infrastructure is creating opportunities for business and investors. 10Minutes talks about the challenges in financing and executing projects on time and on budget.

From crisis mode to sustained efficiency

With the strength of the recovery remaining uncertain, companies have yet to ease up on cost-reduction measures. In fact, many are going to the next level, re-thinking operating models and structures to see how various functions can deliver even more value at lower cost. 10Minutes looks at how companies are embedding lessons from the crisis into more disciplined management of corporate performance.

How PwC can help

To have a deeper discussion
about the business implications of
monetizing carbon, please contact:

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