

A cap's in hand

Truman Semans, director for markets and business strategy, the Pew Center on Global Climate Change, reviews policy developments at the US federal, state and international levels, describes why business engagement is critical and highlights the steps leading companies should take to prepare for a carbon-constrained future

Over the last year, business engagement in climate change has approached critical mass in the US. Leading companies across many industries are calling for mandatory greenhouse-gas (GHG) emission limits, while implementing corporate strategies that address the risks and opportunities presented by climate change.

There is a growing sense that US policymakers will soon pass national climate-change legislation. In a November 2005 survey of 31 large corporations taken as part of the Pew Center's 2006 report, *Getting Ahead of the Curve: Corporate Strategies That Address Climate Change*, 90% said they believed climate regulations were imminent. Of that 90%, 67% believed regulations would take effect between 2010 and 2015, while 17% expect this before 2010. This implies that companies think legislation will pass Congress even sooner.

That foresight among companies that were early leaders on climate seems increasingly accurate. In April 2006, the Senate Energy and Natural Resources Committee held a public conference on design of such a programme, in which a number of major companies stated their support through either oral or written testimony for a mandatory climate-change policy.

The momentum in Congress increased further following the 2006 mid-term elections, when the Democrats gained control of both the House of Representatives and the Senate. In the House, shortly after taking over as Speaker, Nancy Pelosi publicly declared that climate change will

be, after the war in Iraq, the top priority on her agenda. In 2007, Congress has moved past the debate on whether to act and begun actively designing national legislation to control GHG emissions.

As policy developments begin shaping world markets more profoundly, a new paradigm for strategic corporate engagement on climate change is emerging. This model brings together the core strengths of a company across all functional areas – environmental management, planning and corporate development, research and development, and marketing – together with a strong focus on public-policy engagement. A clear illustration of this is the US Climate Action Partnership (Uscap) – a coalition of now 27 large corporations recognised as leaders on business strategy and six leading non-governmental organisations (NGOs), including the Pew Center – which is pressing for federal climate-change regulations at the earliest possible date.

The emergence of Uscap following the November elections gave a significant boost to the prospects for the near-term passage of, federal legislation in the US. The group, which at the time was made up of 10 large companies and four leading NGOs met a bipartisan group of congressional leaders in January 2007 and announced detailed recommendations for climate-change legislation. Uscap urged Congress to legislate as soon as possible and called for the US to re-engage in international negotiations. Uscap believes a cap-and-trade system with explicit near- and medium-term targets should be the cornerstone of US policy and that additional policies should be pursued in sectors including coal-based energy, buildings and efficiency, and transportation, in which the initial price signal will not sufficiently reduce emissions and advance new technologies. The coalition also recommends a dramatic strengthening of federal research programmes to provide stable, long-term financing for low-GHG technologies.

Uscap has helped to stimulate a wave of congressional hearings on climate policy in 2007. Congressional focus in the spring and summer of 2007 has been on fast-track items to be implemented in advance of a national cap on emissions as well as progress towards an overhaul of transportation policies. In June, the

Senate passed an energy bill with the first substantial improvement in the nation's automobile fuel-efficiency standards since 1975, which would increase the average mileage of new cars and trucks from 25 miles a gallon today to 35 miles/USG by 2020 – a 30% improvement on today's law. The bill also provides tax incentives for the development of alternative fuels and requires far greater use of ethanol and other biofuels – from 7.5bn USG required in 2012 to 36bn USG by 2022, with more than 20bn USG to come from cellulosic ethanol.

The Senate bill also includes new lighting and appliance efficiency standards as well as provisions that promote carbon capture and sequestration (CCS) from power plants.

Later in the summer, the House passed legislation that included lighting and efficiency standards, as well as provisions to promote CCS. Unlike the Senate bill, the House measure does not call for increases in vehicle fuel-economy standards. It does, however, mandate that electric utilities produce 15% of their energy from renewable resources by 2020, a provision considered, but ultimately dropped by the Senate.

Summary of Uscap recommendations

The principal Uscap recommendation is that Congress should enact legislation for an economy-wide programme to achieve significant reductions of GHG emissions as soon as possible. More specific recommendations include:

- ▶ Aim to stabilise global GHG concentrations over the long-term at a CO₂-equivalent level of between 450 and 550 parts per million.
- ▶ Adopt a market-driven, economy-wide approach, including a cap-and-trade system, which ensures emissions-reduction targets will be met, while generating a price signal for GHGs that stimulates investment in necessary technologies.
- ▶ Establish short- and medium-term mandatory GHG reductions-targets – 100-105% of today's levels in five years of enactment, 90-100% in the following five years, and 70-90% in the third five-year period – and a target zone of 60-80% reductions from present levels by 2050.
- ▶ Adopt additional policies in sectors where the initial price signal under cap-and-trade will neither sufficiently reduce emissions, nor advance new technologies, especially for transportation, buildings and energy efficiency, and coal-based energy.
- ▶ Establish a federal technology research, development, demonstration and deployment programme with stable, long-term financing for low-GHG technologies.
- ▶ Urge the administration to take a leadership position in international negotiations for a post-2012 global climate framework.

House and Senate conferees are expected to reconcile the two bills. House and Senate leaders have indicated that full consideration of climate legislation is expected in autumn 2007. While there are at least 10 pieces of legislation pending that would establish economy-wide cap-and-trade programmes, analysts believe a new measure being crafted by Senators Joe Lieberman (I-CT) and John Warner (R-VA) may be the most significant development. This bill, given the support of Warner, a senior Republican and key swing vote, would be the first with the bi-partisan support needed for passage by the Environment and Public Works Committee, and is likely to be the first to reach the Senate floor for debate. Lieberman and Warner have stated that Uscap's recommendations will be a major factor in shaping legislation.

While momentum is growing at the federal level, states have been leading the way on climate policy for several years. The growing patchwork of state regulations is creating greater complexity for business, which in turn is generating greater business support for federal solutions. Today, nearly all states have enacted some form of climate-related policy, and a growing number are joining regional GHG initiatives. More than 15 states have GHG emission-reduction targets; 34 have climate action plans either in place or in progress; 24, plus Washington DC, have established renewable energy portfolio standards; and 34 have mandates or incentives promoting ethanol.

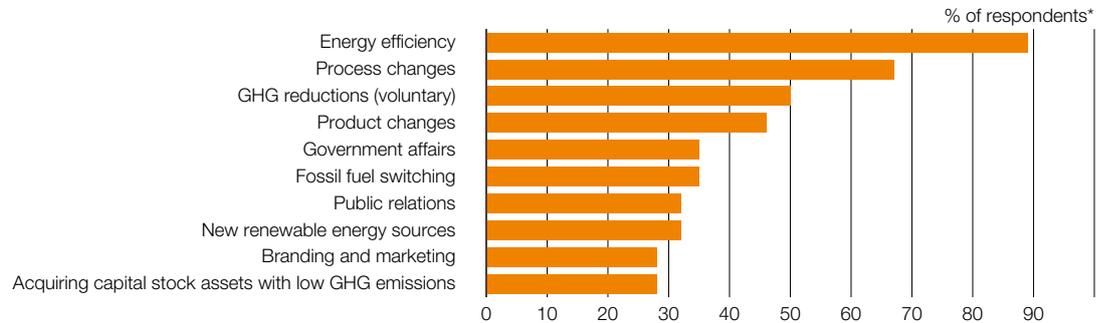
California, the world's sixth-largest economy and 12th-largest source of CO₂ emissions, has built on its long-standing leadership on climate change with a number of developments, most notably passage of the Global Warming Solutions Act, which requires it to reduce state-wide GHG emissions to 1990 levels by 2020.

California is also moving forward with a combination of new regulatory standards and market-based policies to reduce vehicle emissions, which make up about 40% of the state's total emissions. In January 2007, an executive order established a low-carbon fuel standard that by 2020 aims to reduce the carbon intensity of passenger vehicle fuels by 10%. Fuels providers will have flexibility in complying with the mandate by, for example, blending more ethanol into gasoline products, purchasing credits from power utilities supplying low-carbon electrons to electric vehicles, or diversifying into low-carbon hydrogen fuels.

Movement in the international arena

Internationally, there has been modest but genuine progress toward a post-2012 global agreement, including some movement from the US following years of obstructionism. In June 2007, the G8 leaders agreed to "seriously consider" a European proposal to reduce GHG emissions to 50% below 1990 levels by 2050, and set an ambitious time-line for establishing a global agreement under the UN Framework Convention on Climate Change (UNFCCC) by 2009. And although wide differences remain on fundamental issues, such as the need for binding international commitments, observers are optimistic that the November 2007 Conference of the Parties meeting will further negotiations for a post-2012 global agreement.

Figure 1 Top-10 climate-related programmes that contribute Financial Benefits



The G8 also agreed to a US proposal for a meeting of the world's main emitters to reach agreement on a long-term global emissions goal. In accepting the US' offer, the other G8 leaders insisted on a broader agenda for the major-emitters process, including "national, regional and international policies, targets, and plans ... and an ambitious work programme within the UNFCCC".

Meanwhile, efforts to further develop international GHG markets have grown. Evidence of increased investor interest is the rapid growth of emissions trading and investments in low- and no-carbon technologies. According to the UN Environment Programme, investment capital flowing into renewable energy climbed to \$100bn in 2006, up from \$80bn in 2005, while \$30bn was traded in the carbon markets, mostly within the EU Emissions Trading Scheme (ETS).

Business action on climate change

The growth in strategic business engagement on climate change has been stimulated largely by the movement towards market-based policies in the US, strong European commitment to such policies and the brightening outlook for a post-Kyoto global agreement. But there are other important sources of motivation for businesses. One is the signal provided by the dramatic increase of money moving into these markets. Another is the message from large financiers, which are increasingly building climate change into their core investment and business strategies.

Mainstream investors Goldman Sachs, Bank of America, JP Morgan Chase and Citigroup are adopting guidelines for lending and asset management aimed at promoting clean-energy and climate-friendly technologies. Bank of America and Citigroup have launched initiatives to address global climate change through investments in alternative energy and clean technology. Financial services firms are also boosting research on the investment implications of climate regulations. By mid-2007, Citigroup, Lehman Brothers and UBS had issued widely read reports on the risks and opportunities for investors of climate change.

This year has also been notable for the emergence of a significant new player in the climate change issue: credit-ratings agencies. Ratings agencies are one of the

single most influential voices heard by any publicly traded company, so their growing involvement in the climate issue can not be overstated. In its May 2007 report, *The Credit Impact of Climate Change*, Standard & Poor's (S&P) says: "now is the time to examine the financial and credit impact of the different strategies, technologies, fuels and legislative agendas being discussed in the market."

The response from leading companies on the climate issue follows closely the main findings from the Pew Center's October 2006 Corporate Strategies report. First, timing on climate change must be strategic, with a focus on staying one step ahead of the competition. For most of the leading companies today, the question is no longer whether to act, but when. This can be seen in the growing level of corporate involvement in voluntary GHG-reduction programmes, such as the US Environmental Protection Agency's Climate Leaders programme, which has grown by 21 companies over the last year. According to the Pew Center's research, many companies that have taken early steps report financial benefits from climate-related programmes, including energy-efficiency improvements, process changes and better customer relations (see Figure 1).

Also, the list of businesses involved in the policy process is also growing quickly. For example, DuPont has led a very important effort to advance the Business Roundtable's policy position on climate change. Now, five of eight chief executive committee chair people in that powerful industry association publicly favour mandatory climate policies, including Michael Morris, head of the largest coal-burning utility in the US. The corporate world is convinced that it needs to be involved in the debate or risk being left behind as crucial policy decisions are made. As Duke Energy chief executive James Rogers puts it: "If you're not at the table when these negotiations are going on, you're going to be on the menu."

Leading companies are shifting climate strategies from risk management and bottom-line protection to an emphasis on business opportunities. The growth of partnerships focused on developing climate-friendly technologies is illustrative of this shift. Chevron, the oil major, and Weyerhaeuser, the world's biggest lumber producer, have set up a joint venture to explore development of cellulosic

biofuels on an industrial scale from plants, wood fibre and other non-food sources. Both view the partnership as an important step towards commercial opportunities – reflecting their view that cellulosic biofuels will fill an important role in providing a source of low-carbon transportation fuel.

In a similar partnership, ConocoPhillips is teaming with Tyson Foods to produce and market a renewable biodiesel made from beef, pork and poultry fat. The biofuel will be distributed through existing ConocoPhillips pipelines while much of the feedstock will come from several Tyson rendering plants, allowing the companies to use existing resources for value creation and new growth platforms. Production is expected to reach 175m USG/y by 2009, representing about 3% of the diesel produced by ConocoPhillips in the US. Other developments in the transport sector include a recently announced partnership between the Ford motor company and electric utility Southern California Edison to promote plug-in hybrids. Ford also wants to investigate how technology can be used to allow the vehicles to return unused electricity to the grid during times of peak demand.

GM is also stepping up efforts to develop cars and trucks that produce significantly fewer GHG emissions. Its Volt is an electric car that uses a gasoline-fired engine to recharge the battery once it runs down. The car is capable of going about 40 miles straight on pure electric power, which means most US commuters would be able to get to and from work in a Volt without burning an ounce of gasoline. US carmakers have also announced plans to boost production of flex-fuel vehicles capable of

running on E85 – 15% gasoline and 85% ethanol. Their aim is to have 50% of their fleet composed of flex-fuel vehicles by 2012. But the push for more flex-fuel vehicles has met lukewarm enthusiasm as a massive ramp-up in biofuels – using today's technology – poses significant environmental and social problems (see box).

The market transformation related to climate change is still in its infancy, but even from beyond Europe – the most highly transformed part of the world marketplace – firms are reporting positive returns on climate-related business strategies. A key example of this is GE's ecomagination line of environmentally superior products. GE reports that revenues from these products have grown faster than expected, topping \$12bn last year, putting the company on track to exceed its 2010 sales target of \$20bn.

Pew Center research found that the ultimate achievement is a game-changing strategy that allows a firm to jump ahead of competitors by creating new markets or reshaping the rules of existing markets in their favour, which for climate means reshaping policy. And such strategies are beginning to emerge. GE and BP are working together to develop up to 15 clean-burning fossil-fuel power plants that will separate and burn hydrogen while capturing and storing CO₂ in either deep geologic formations or oil wells to boost petroleum production.

BP is also partnering DuPont to produce next-generation biofuels with properties that help overcome the limitations of ethanol. The partnership is intended to leverage DuPont's biotechnology and biomanufacturing capabilities with BP's fuels technology and marketing expertise, while taking advantage of the increasingly favourable policy environment for biofuels in both the US and Europe. The first product for introduction is biobutanol, a biologically derived fuel with higher energy content than ethanol. Biobutanol has low vapour pressure and higher tolerance to water contamination in gasoline blends, meaning it can be used in existing gasoline supply and distribution infrastructure, unlike ethanol, which is shipped by rail or truck. BP and DuPont plan to introduce market quantities of biobutanol to the UK by the end of 2007.

Biofuels: key issues and recommendations

It is critical that fuel policies do not create new problems, while seeking to solve existing ones. Close co-operation between developed and developing countries is needed to establish a coherent, co-ordinated plan for the biofuels value chain, specifically:

- ▶ Public policies must promote truly low-carbon alternative fuels. Life-cycle carbon-content standards are an option to encourage energy-efficient approaches to biofuels and prevent the misallocation of investment to carbon-inefficient technologies;
- ▶ As biofuel use expands, biomass must be produced responsibly, considering both environmental and socio-economic effects. Price spikes in food staples that especially affect the poorest must be prevented; and
- ▶ Avoid increased production of coal-based synfuels – which are attractive from an energy security standpoint, but yield life-cycle emissions at least as bad as gasoline – unless production includes carbon capture and storage technology.

The future

The days when businesses could treat the possibility of mandatory climate change regulations in the US as a notion to either ignore or oppose are gone. The growing inevitability of GHG controls has drawn business leaders into the policy debate; many recognise the benefits of supporting and helping shape clear, consistent and environmentally credible legislation. Just as importantly, the threat of regulation has sparked private-sector innovation, as companies race to develop new products and services capable of thriving in a carbon-constrained world. Leading companies across many industries are taking an increasingly integrated approach to the issue, most notably combining policy engagement with corporate strategies that address the risks and opportunities of climate change. These companies recognise the extent to which policy can shape markets and, as a result, are stepping up their efforts to shape policy.