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Public Policy and Strategy Briefing

The Road Ahead on Climate Change

On December 15, the nations of the world concluded a two-week meeting in Bali with agreement on a roadmap for negotiating a post-Kyoto international climate treaty, to be concluded by December 2009 in Copenhagen. Ten days earlier, in Washington, the Senate Environment and Public Works Committee reported out the ambitious Lieberman-Warner "cap and trade" bill calling for 70 percent reductions in greenhouse gas emissions by 2050. And on December 18, Congress passed energy legislation including the first major boost to fuel economy standards in over 20 years, to 35 miles per gallon by 2020; a renewable fuel standard requiring a five-fold increase in ethanol and other biofuels by 2022; and a suite of other measures including the phase-out of incandescent light bulbs, starting in 2012.

Meanwhile, out on the campaign trail, many of the leading candidates have announced far-reaching plans, including aggressive cap and trade legislation, designed to spur the transformation of the US economy from a high- to a low-carbon model.

And a rising chorus of elites that used to be, at most, disengaged on global warming--including business leaders, national security experts, even conservative evangelical leaders--are calling for concerted national and international efforts to confront the issue. Earlier this year, for example, a group of CEOs of major corporations such as General Electric, Duke Energy, Alcoa and DuPont joined with major environmental groups, under the umbrella of the United States Climate Action Partnership, to call for a mandatory program to cut greenhouse gas emissions 60-80 percent below current levels by 2050. And a group of 11 distinguished former Army generals and Navy admirals published a report called *National Security and Threat of Climate Change*, describing climate change as a "threat multiplier for instability" in volatile parts of the world.

The recent cultural landscape, too, has been dotted with global warming cover articles in major magazines, front-page stories in leading newspapers, columns, editorials, green marketing, television specials, Al Gore's *Inconvenient Truth* and a Nobel Peace Prize for both Gore and world climate scientists acting under the auspices of the UN's Intergovernmental Panel on Climate Change (IPCC).

Driving all this intensified focus has been a steady drumbeat of scientific reports and analyses by leading US and foreign researchers indicating not only that climate change appears to be happening as scientists have long predicted, but that it appears to be happening at a faster and even more alarming pace than expected. In its most recent major assessment report, issued earlier this year, the IPCC paints a stark picture of the risks ahead, including rising sea levels threatening coastal cities around the world; increased water scarcity for as many as 1-2 billion people; thawing permafrost destabilizing building foundations and other structures; increased hunger in the dry tropics owing to falling crop yields; and mass extinctions, affecting 20-30 percent of global plant and animal life.

In light of all these developments, where is national and international policy heading over the next two to three years, and how should companies think about their own conduct in light of anticipated developments?

International

Background. The meeting in Bali was the 13th "Conference of the Parties" (COP) to the 1992 UN Framework Convention on Climate Change (UNFCCC), the foundation agreement in the global effort to contain global warming. The Framework Convention, agreed to in Rio and promptly ratified by the US Senate, announced a non-binding aim for developed countries to reduce their emissions to 1990 levels by the year 2000. Under its terms, the parties met in 1995 to review progress and agreed on a negotiating mandate for a stronger agreement, culminating in the Kyoto Protocol in December 1997.

Under Kyoto, developed countries agreed to binding emissions targets for the period 2008-2012, though the targets differed--for example, the European Union target was an 8 percent emissions cut below 1990 levels; the US target was a 7 percent cut; and the Japanese target was a 6 percent cut. The Protocol also included permission to use US-proposed market mechanisms, such as emission trading, to limit costs. And it imposed no requirements on developing countries. Further negotiations on important elements of Kyoto continued for four

more years, finally concluding in 2001 at the Marrakesh Conference of the Parties (COP 7), and the Protocol finally entered into force in February 2005, more than seven years after it was first adopted.

The Kyoto Protocol was a landmark agreement, but its effectiveness has been constrained for a number of reasons, including limited coverage, since the United States pulled out and developing countries are exempt; doubts about its environmental integrity, since large quantities of emission credits have been created under Kyoto that do not correspond to any real emission reductions; and the lack of any sense that Kyoto, limited to a single five-year time period, will solve the problem.

Bali. Against this backdrop, 187 nations descended upon Bali early this month in hopes of outlining a negotiating roadmap for a new-and-improved international protocol. The Bali talks reprised some of the perennial divisions that have long marked and marred climate negotiations. The EU pushed for, and the US resisted, hard targets at an unrealistic level of ambition--25-40 percent reductions below 1990 levels by 2020--far outpacing even the most far-reaching proposals circulating in the United States. And developing countries repeated their standard objection to any binding commitments while pressing for more technological and financial assistance.

In the end, the parties managed to agree to only a very loosely framed process that left almost all the specifics to be negotiated later. At the same time, there were some important developments. Most particularly, developing countries agreed for the first time to consider taking "measurable, reportable and verifiable" actions to mitigate greenhouse gas emissions. That may not sound like much, but it is a significant change from their traditional "no commitments of any kind" posture, opening the door for concerted negotiations over measures to be taken by at least the more advanced developing countries. The fact is that even those most sympathetic to developing country views on equity, such as the EU, must understand two important facts: first, that it will be impossible to approach the goals favored by scientists and others without concerted action by leading developing countries in a world where developing countries already account for about half of global emissions and will account for 75 percent of the growth in global emissions over the next 25 years; and second, that not all developing countries need be treated the same. Significant commitments are really only needed from the relatively advanced developing countries like China, India, Brazil, Indonesia, etc.

Developed countries, for their part, agreed to consider taking "commitments or actions" that could--but are not required to--include binding emission targets.

The Bali roadmap also put the concept of avoided deforestation into play. Deforestation accounts for some 20 percent of global CO₂ emissions, but avoided deforestation was not recognized as a means of reducing emissions under Kyoto owing to doubts about whether such avoided emissions could be reliably counted. The Bali agreement includes a number of steps intended to work through such issues. There is a lot of momentum to do this, given the importance of preventing deforestation both for climate and wider ecological reasons.

So what now? The road ahead for the climate talks will be enormously challenging. The issues are highly complex and the time prescribed in the roadmap for negotiations--two years--is quite short, particularly since the most important player, the 44th President of the United States, will not make his or her entrance until there are only 10 months left. The reality is that talks will likely carry over into 2010 before they can be concluded.

On substance, it is too early to forecast the shape of a new agreement with any precision, but an agreement that is substantively equal to the task and politically viable--that is, ratifiable--in the United States will need to include a number of key elements:

- Major undertakings by developed countries, probably including emission targets (caps) and timetables
- Significant undertakings by the more advanced developing countries, though these are likely to involve policy commitments rather than national caps--for example, development of a carbon capture and storage system for emissions from coal-fired power plants or major improvements to energy efficiency in buildings and industry
- A long-term goal, out to around 2050
- New provisions on deforestation
- New provisions on adaptation--helping vulnerable countries cope with the climate change that will be

coming because it is already baked into the atmospheric system

- New provisions on both financial mechanisms and accelerating technology transfer to developing countries to help them leapfrog the carbon-intensive stage of development that industrialized countries have gone through

As a matter of process, we can expect--at least from a Democratic administration--a completely rejuvenated US climate diplomacy, including active efforts at the bilateral level, with key players such as the United Kingdom, France, Germany, Japan, China and India; at the small group level, with a group of core developed and developing countries working to flesh out the framework of a broad new agreement; and at the multilateral, UN level, to complete a new agreement by 2010.

Domestic

What about the prospects at home? The primary focus here is likely to be on enacting an economy-wide cap and trade bill--broad legislation to impose a declining national cap on carbon emissions, with the right to trade emission permits in the manner used successfully in controlling the acid rain problem. The ambition and reach of a cap and trade bill will depend on who is elected President, but there is likely to be at least some form of significant cap and trade legislation in any event.

Cap and trade legislation will be complex and contentious. The central issues that will be debated and fought over include:

- The stringency of the cap itself
- Where the cap applies--upstream, at the mine mouth or refinery, or further downstream, at utilities or industrial concerns
- How comprehensive it is--economy-wide or something less than that
- What percentage of emission permits will be auctioned as compared to handed out on the basis of an emitter's historical record, and how revenues generated by an auction will be used (Depending on the stringency of the cap and therefore the price of permits, auctioning all permits could easily produce \$100 billion/year or more in revenues.)
- How reductions from "early action" and other domestic or off-shore projects that reduce emissions will be treated
- Whether there will be a cost-cap feature built into the system, such as the "safety-valve" provision included in legislation offered by Senator Bingaman, or softer cost-controls of the kind included in the Lieberman-Warner bill

Beyond cap and trade, there will be a strong push for a set of complementary policies, including performance standards for renewable electricity and energy efficiency, requirements to build new coal plants with technology making carbon capture and storage possible, a range of consumer incentives for the purchase of energy saving goods such as hybrid and plug-in hybrid cars, substantially increased spending on research, development and deployment for new technologies, and the like.

In evaluating where the overall energy/climate debate is likely to go, observers should keep in mind that this is a dynamically evolving situation. In 1997, the Senate went on record 95-0 against a strong international treaty. For 20 years, until last week, there was little movement on fuel economy standards for cars and light trucks. But in the first half of December, an ambitious cap and trade bill has passed the Senate Environment and Public Works Committee, and John Dingell, among others, has accepted a 40 percent increase in fuel economy standards. In addition, the Supreme Court's April 2007 ruling in *Massachusetts v. EPA*, holding that EPA has authority under the Clean Air Act to regulate CO₂ as a pollutant, opens the door for potentially significant regulation by EPA, especially if EPA finds itself urged on rather than held back by the White House. Thus, it would be a mistake to look at a snapshot of the current array of political forces and draw conclusions about what might or might not happen 18 to 30 months from now. Eighteen months ago, no one would have given legislation like the Lieberman-Warner bill much chance to clear the Senate EPW Committee.

Implications for Business

In sum, we are moving inexorably toward a carbon constrained world. The speed with which we get there will depend to some extent on the degree of commitment and energy that a new President brings to the issue, but, one way or another, we will get there before long. The governing approach on energy and climate of the past seven years cannot last. Thus, companies ought to start planning, if they haven't already. There will be many risks and many opportunities ahead. For example:

- *Assessing, tracking and reducing emissions.* Businesses with a significant carbon footprint will need to assess and track their own emissions and analyze where opportunities lie to make reductions. There are likely to be many such low-cost or even negative cost opportunities. In a study released earlier this year, the McKinsey Global Institute found that just by capturing the efficiencies available from existing technologies with an internal rate of return of at least 10 percent, global energy demand could be cut by half or more over the next 15 years, while in the United States alone we could stop the growth of our total energy demand.
- *Business transactions.* In considering and pricing potential acquisitions or significant internal activities such as the expansion or building of facilities, companies will need to factor in the anticipated costs or benefits of carbon regulations.
- *Carbon trading.* It is likely that a vast new world of carbon trading will take hold, both domestically and internationally.
- *Projects in developing countries.* There will be continuing opportunities for doing business in developing countries in ways that reduce emissions and generate tradable emission credits.
- *Financing mechanisms.* One significant mechanism already exists under Kyoto to cut greenhouse gas emissions by channeling resources to developing countries, but, as reflected in the Bali roadmap, there is an active interest in creating new mechanisms to mobilize resources for use in and with developing countries.
- *Technology.* The development, export and transfer of technology will be critical to building a low-carbon global economy. There will be large-scale opportunities for companies who develop and market low-carbon technology solutions.
- *Carbon capture and storage.* It is difficult to square the need to make major emission cuts with continued large-scale reliance on coal in countries like the United States, China and India. One potential answer is to speed the development of carbon capture and sequestration technology to maximize sequestration opportunities, including building the huge new infrastructure of pipelines and geologic storage sites needed to enable it. This undertaking will create large business opportunities for companies that can operate in this arena.
- *Understanding the dynamic legislative, regulatory and diplomatic environment.* It will be important for companies to understand the ongoing progress of legislative, regulatory and diplomatic efforts. We could easily be confronted with major new domestic legislation in 2009, a wide-ranging set of domestic regulations in 2009-2010 (including both national and regional/state/local regimes), and a new global treaty in 2010. As always, the devil will be in the details.
- *Corporate citizenship/branding.* Climate change is becoming a huge issue for the global public. This is still more true abroad than here, but increasingly true at home. Even for non-carbon-intensive companies, the way they approach climate and energy will have an important impact, for good or ill, on their branding and corporate citizenship profile--both here and overseas. Public companies are also facing increased pressure to evaluate and disclose potential risks from climate change in their corporate reporting, including the impacts of new carbon regulation, climate-related physical events, and growing demand for low-carbon technologies and products.