

**THOMPSON
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**CLIMATE CHANGE AND
SUSTAINABLE BUSINESS
SOLUTIONS UPDATE****Developing an Effective Carbon Management Program**

Climate change is emerging as one of the most important and complex policy areas in the United States and in offshore markets. The climate change phenomenon arises from the growing scientific consensus that the earth is warming, human activities are causing or contributing to such warming and calamities (such as flooding, droughts, famines and substantial social and military disruption) will occur if global warming is not curtailed.

The science has in turn led to a growing public consensus that greenhouse gas (GHG) emissions must be reduced. Many countries are already regulating emissions of carbon dioxide, the most prevalent form of GHG. In this process through their regulatory markets, they are capturing external environmental values into environmental instruments or programs with asset values increasingly validated by trading markets. In the United States, with the election of President Barack Obama, who supports climate change legislation, and a Democrat-controlled Congress, the debate has shifted from whether legislation is necessary to when and how the inevitable management of carbon emissions will occur in the U.S. economy.

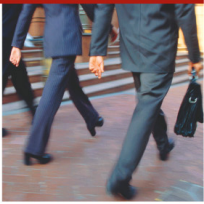
With new federal carbon legislation pending in the House and the Senate scheduled to start its deliberations this summer, this is a good time for companies to assess how climate change risks relate to their primary business objectives and operating business models. It also is a good time to plan so a company can position itself to not only weather the impending onslaught of new and expensive regulatory programs that will affect it and its customers and suppliers but possibly capitalize on the opportunities presented by the sweeping legislative and regulatory initiatives.

KEY FACTORS AFFECTING U.S. BUSINESSES

There are several significant drivers of the climate change risks and opportunities facing U.S. businesses:

One of the major factors influencing public opinion and political response is the growing scientific consensus about global warming. Most importantly, 2,500 scientists from more than 100 countries in 2007 issued the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), which found, among other things, that global warming is “unequivocal” and that they have a “very high confidence” that human activities since 1750 are causing it. A subsequent IPCC report described the draconian impacts from climate change. These reports can be found at www.ipcc.ch.

An increasing number of states and regions have implemented or will implement mandatory GHG reduction programs. They are driven by economic, regional and employment considerations to



promote future energy independence and economic development in response to the challenges of globalization in their markets. This includes the Regional Greenhouse Gas Initiative (RGGI) involving 10 Northeastern states that have agreed to the first cap-and-trade system in the nation to cover GHG emissions from regional power plants. The RGGI participants have already held two public auctions of GHG emission allowances. The Western Climate Initiative includes seven Western states and two Canadian provinces and plans to implement a regional, economy-wide cap-and-trade program. The Midwest Greenhouse Gas Accord, established in 2008, includes six Midwestern states and one Canadian province as full participants (Ohio is participating as an “observer”). The Accord has announced plans for an economy-wide cap-and-trade program that is scheduled for review by the region’s governors in September 2009. Certain states (led by California) also are moving forward with state and regional climate change programs in 2009.

Businesses face capital market conditions that have fostered limited credit, a flight to quality for new investments, improving balance sheets and enhanced liquidity to strengthen company operations. This is occurring in a massive shift to public sector involvement and partnering with the private sector to achieve national energy, economic stimulus and financial recovery objectives.

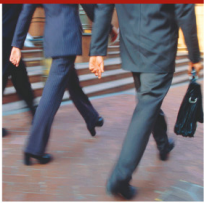
On March 10, 2009, the U.S. EPA released a proposed rule that would require significant carbon emissions sources in the U.S. to submit annual emission reports. This data will be used for future policy-making decisions, including the potential development of a cap-and-trade program. The EPA also recently released its proposed endangerment finding under the Clean Air Act for carbon, initiating a potential GHG emissions regulatory track over the next 18 months if Congress fails to enact legislation.

Corporate shareholders and watchdogs have been calling for increased public disclosure of climate change impacts on publicly held companies.

An increasing number of companies have included GHG tracking, reduction and reporting as part of their corporate social responsibility initiatives. Companies also face pressures to respond to climate change issues from their competitors, customers and investors. Different global and domestic U.S. regulatory regimes create conflicts and foster a wide array of accounting, energy efficiency, capital investment and technology responses.

CLIMATE CHANGE RISKS AND OPPORTUNITIES

Climate change poses substantial risks to businesses, but also presents opportunities. Investors are already discounting the share prices of companies that are not well positioned to compete in a carbon-constrained world. Raw material and energy costs will rise, not to mention the direct costs that certain facilities will incur for the right to emit carbon under the cap-and-trade program expected in federal legislation (and currently being considered by many states tired of waiting for federal action). Companies may see increased disruptions in the supply chain and operations. Many consumers now take into consideration a company’s environmental performance or social consciousness (particularly regarding the company’s carbon footprint and efforts to reduce



emissions) when making purchasing decisions. Companies that lag behind their competitors concerning climate change issues are at risk of losing customers, quality staff and hires, supply chain advantages and investors.

But climate change also presents business opportunities. Proactive companies can gain competitive advantages and will attract new customers and investors. The companies that have implemented strategies for energy and raw material efficiency will fare better than competitors who have not. There is a growing voluntary market in carbon credits or offsets with current trading levels in the billions of dollars. The market is expected to grow into the trillions in coming years. Energy-efficient companies in the U.S. may benefit from the sale of allowances in future carbon markets created by federal and state legislation (or in the growing voluntary markets, such as the Chicago Climate Exchange). Investors are pouring money into “green” or “clean” technologies, such as alternative and renewable energy, green buildings, and water and wastewater treatment technologies. Federal and state grant, tax and bond incentives are encouraging the rapid turnover of existing plants to deploy new technologies. Companies that manage and mitigate their exposure to climate change risks while seeking new opportunities for profit (think GE Ecomagination) will gain competitive and market advantages over their competitors.

CARBON MANAGEMENT PROGRAMS

Companies interested in managing climate change risks as a way to achieve their broader objectives should consider implementing a carbon management program, consisting of the following general elements:

- *Planning.* Start the planning process before stakeholders or legislators start it for you. Certainly, energy intensive companies (chemicals, paper, aluminum, utilities and others) can more readily see what lies ahead and can begin to chart their own course early in the game. Other companies may not have seen the imminence or direct applicability of climate change legislation and impacts. Many of these companies start the planning process after hearing from investor groups or customers or after losing ground to competitors. In any event, some early and judicious planning is advisable even if it consciously results in a “wait and see” evolutionary approach to assess the impact on business models. Corporate EHS managers can take some simple steps to help their CEO avoid being blindsided by stakeholders or the company’s board of directors.
- *Goals.* Set overall program goals at the top levels of the company, and implement them on an interdisciplinary basis through all company functions to show carbon relationship to financial goals, intensity and efficiency of energy use and costs, and corporate growth goals. While it is always best to start with the ultimate goals in mind, that may not be possible for all companies. Some companies may be prepared to set ambitious goals concerning counting emissions, transparency and emission reduction. Other companies may set more basic goals, such as initial data-gathering.



- *Climate change group.* Develop a climate change group with contributions from environmental, legal, operations, competitive intelligence, financial, energy, communications, information technology and IP functions. Climate change requires the quintessential multidisciplinary approach. Each of these groups (and others) will play some role in the company's program. Getting the various groups on board and understanding the company's goals (as set by upper management) is a critical step for an effective program.
- *Carbon footprint.* Establish a baseline GHG emissions inventory (carbon footprinting). If you are not measuring it, you are not developing the tools to manage the issues and their escalating consequences. Other sources to include in your resource baseline are your water usage, chemicals, energy efficiency and waste management and recycling.

There is nothing wrong with starting with a straightforward, simple approach to gathering initial data that can be performed by the facilities without overwhelming the facilities and your plant managers. As a company starts down the data collection path and establishes its baseline, it is very likely to need more and better data over time (for example, if the company becomes subject to mandatory reduction programs, voluntary programs and compliance, or if it wants to publicize its emissions, reduction commitments and progress). It is important to gather data now that can be used as a building block for future efforts rather than data lacking necessary integrity, transparency or quality that has low value in the planning stages or that must be substantially re-worked down the road.

With these goals in mind, a company may develop straightforward questionnaires/forms for the facilities using the Greenhouse Gas Protocol (GHG Protocol) as a framework and its materials, calculators and forms. The GHG Protocol was developed by the World Resources Institute and World Business Council for Sustainable Development. It is internationally recognized and provides the framework for existing and evolving climate registries. It was the framework, for example, for the EPA's Climate Leaders Greenhouse Gas Inventory Protocol and a wide number of other national and private carbon reporting systems. It is currently used by almost two-thirds of the *Financial Times* 500 companies on a global basis. The GHG Protocol's Corporate Accounting and Reporting Standard can be found at www.ghgprotocol.org/files/ghg-protocol-revised.pdf.

The other primary standard is ISO 14064-1, which was established by the International Standards Organization to provide consistency and transparency to these GHG calculations. Finally, PAS.2050 European is a joint program with the Carbon Trust but supports carbon calculations for products and is more supportive for carbon measurement to support carbon products labeling than what many companies initially will need. U.S. companies also can consider the other U.S.-based standard, the California Climate Action Registry, General Reporting Protocol.

The GHG Protocol is generally straightforward and user-friendly and was developed for use by non-technical company staff. It provides GHG calculation tools for the Scope 1 (direct, such as



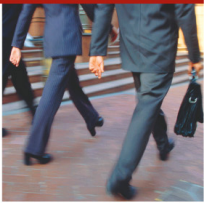
onsite fuel combustion and fleet vehicles) and Scope 2 (indirect, such as purchased electricity) emissions on which most companies want to focus their initial efforts. A company should be able to distill proper questionnaires/forms for the facilities from this standard. It can decide where to draw the boundaries (for example, focusing only on electricity (and perhaps steam and chilled water, which is fairly prevalent in Europe) purchases for Scope 2 emissions) or where it needs to reduce burdens or complexity. A company will need to give guidance on emission factors, which will vary by facility depending on the source of electricity (*e.g.*, coal-fired, nuclear or natural gas sources). The GHG Protocol can be used to create the steps to identify the sources, collect the data, apply the emission factors and roll-up the data to the corporate level for further use and analysis.

Several initial scoping considerations need to be resolved by a company before it can launch the program:

- Geographic boundaries of reporting.
- Required reporting of six GHGs—or will there be fewer or more?
- Organizational boundaries based on which facilities, operations and sources to include. This is a critical choice to establish consistency across reports and also to avoid double counting when multiple emissions reports are prepared. Determinations can be based on a number of factors such as control, equity share, parent, subsidiaries, affiliates or leased facilities.
- Operation boundaries, including Scope 1 and Scope 2 and delaying Scope 3 (indirect, such as business travel, employee commute and shipping by third parties) considerations until a later phase and deciding how to handle CO₂ emission from biomass combustion (if any).
- Level of reporting facilities, but what to do with mobile combustion sources?
- Which base year should be used depending on availability of data and other considerations?
- Quantify first and then determine if any areas will rely upon estimation techniques.

The company will also need to consider how it will manage the data from the facilities. There are a number of software packages that are available for IT and data management purposes.

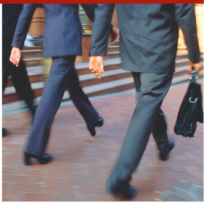
Using the GHG Protocol as a framework should result in the collection of more accurate and consistent data and the establishment of sound collection systems for future efforts. If the company communicates its efforts to investor groups, it will add credibility to say that the company is using the GHG Protocol as the framework for data collection. Using the GHG Protocol also puts the company in a better position if it is required to participate in carbon emission registries (like the one the EPA is developing) or decides to voluntarily participate, but is respectful of the international nature of the company and its global operations.



- *New metrics.* Companies will need to establish new metrics and corollary strategy of management and financial investments going forward. Different methods can be used to measure offsets and reductions, using common protocols and third-party auditors. Companies should weigh absolute emissions and emission intensity targets. The opportunity is provided to refine the corporate business model based on efficiency and reduced consumption of materials, resources, energy and consumables. The reduction in energy and resource intensity managed with IT and proper metrics can offer financial benefits while awaiting the final domestic and global carbon framework for the longer term. Metrics enhancing adaptation, reduced consumption and refined business models will provide benefits independent of the public policy process if well managed. (As examples, consider GE, DuPont, Wal-Mart, Xcel and Johnson & Johnson.)
- *Using the data.* Analyze baseline data (and thereafter regularly each year) by region and markets to determine risks and opportunities and to establish action plans moving forward. For example, there may be a need for further, more detailed analysis of emissions and energy uses to identify efficiency opportunities; consider costs and benefits of participation in voluntary programs, such as the EPA's Climate Leaders program, Chicago Climate Exchange or U.S. Climate Action Partnership; assess applicability of state and regional GHG programs and possible financial and tax incentives; assess potential impacts of future federal legislation (e.g., direct and indirect costs, supply chain and transportation profile); manage energy supply, pricing and reliability risks; and develop an international trade/competition strategy relating to climate change.
- *Reduction goals.* Consider reasonable GHG reduction goals and establish a plan to meet such goals. Consider the use of quality carbon offsets as part of an interim cost-effective implementation strategy.
- *Transparency.* At the appropriate time, and if consistent with the company's goals, publicize the data and reduction goals and progress in meeting them for your stakeholders.

CONCLUSION

Although the scientific and legislative debates continue, the impact of climate change certainly will be felt by U.S. businesses. Companies that face the challenges straight-up and dedicate the resources to understand and manage the risks and realize the opportunities will emerge as the leading businesses in the future. Market conditions and the global financial markets are demanding the inclusion of carbon as an internal social cost to be incorporated and monetized into the cost of production of goods and services. That said, a cautious near-term approach is recommended in light of the substantial uncertainties concerning the final form of federal legislation and key regulatory initiatives overlapping with state and regional activities, as well as the emerging carbon markets. Once enacted, these dynamic forces will demand the creation of new business models, revised metrics for performance and corporate social performance objectives. These transitions will be incorporated into more public/private partnerships and



government partnering in energy, financial investment, clean tech and R&D, creating new sustainable business solutions for a global marketplace demanding such goods and services.

FOR MORE INFORMATION

If you have any questions about this rapidly evolving area and how your company can best prepare, please contact Michael Zimmer at 202.973.2740 or **Michael.Zimmer@ThompsonHine.com**, Andrew Kolesar at 513.352.6545 or **Andrew.Kolesar@ThompsonHine.com**, any member of Thompson Hine's **Climate Change and Sustainable Business Solutions Group** or your primary Thompson Hine lawyer.

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