



Tuesday, October 21
9:00 am-10:30 am

404 Climate Change for Business

Melissa M. Allain

Laboratory Counsel

Lawrence Livermore National Laboratory

Kathleen Barlow

Vice President

Marsh USA, Inc.

Thomas P. Bishop

Senior Vice President, General Counsel, and Chief Compliance Officer

Georgia Power Company

W. Brinkley Dickerson Jr.

Partner

Troutman Sanders LLP

Faculty Biographies

Melissa M. Allain

Melissa Allain currently advises the president of Lawrence Livermore National Laboratory, a premier applied-science facility based in Livermore, California and one of its parent organizations, the University of California, on governance and compliance. As general counsel to the laboratory, she has also enjoyed legal oversight of patenting and licensing cutting-edge technology related to climate change, alternative and renewable energy, security detection devices, and lifesaving medical treatments. Appointed the lab's first ethics officer, she implemented a new ethics program and relevant portions of Sarbanes-Oxley, teaming with the CFO and audit to implement a continuous process for risk assessment and financial assurances.

Previously serving as chief compliance counsel for Tyco Fire and Security, Ms. Allain advised the new management team on marketing and sales practices. At AutoNation in Fort Lauderdale, Florida, she supported domestic and international mergers and acquisitions, and later developed and implemented an ethics and compliance program for employees of the largest automotive retail business in the United States. Ms. Allain also represented Union Oil Co. and its specialty product development and manufacturing operations in the United States, Europe, and Asia. Before moving in-house, she engaged in private practice based in Los Angeles, where she advised a wide variety of clients on environmental, health and safety compliance, litigation, and transactional matters.

Ms. Allain earned her law degree at Harvard Law School, after completing her undergraduate studies at Loyola Marymount University.

Kathleen Barlow

Kathleen Barlow holds the position vice president in the client development department of the middle market practice of Marsh USA, Inc. in Washington, DC, a division of Marsh McLennan Companies. As a sales professional, her responsibilities include all aspects of client management and development in the risk management area for various hospitality, real estate, law firm, and corporate clients.

Prior to joining Marsh, Ms. Barlow practiced law in the Washington DC legal community. Ms. Barlow served as general counsel and vice president of The Bernstein Companies, a commercial real estate and hospitality company in Washington, DC. Prior to joining The Bernstein Companies, Ms. Barlow was a member of the general business group of the law firm of Arent Fox Kintner Plotkin and Kahn, and prior to that, Ms. Barlow was assistant general counsel to First Virginia Banks, Inc., now BB&T.

Ms. Barlow is the past president of the board of directors of ACC's Washington Metropolitan Chapter. Ms. Barlow is also a member of the board of the Georgetown Corporate Counsel Institute (CCI), the Mid Atlantic Real Estate Corporate Counsel

group, the National Brownfields Association, Maryland chapter, Commercial Real Estate Women (CREW), and is the chair of the corporate counsel section of the Women's Bar Association of the District of Columbia. While at Marsh, Ms. Barlow founded the Capital City Women's Forum, an executive level networking organization.

Ms. Barlow earned her JD from Emory University School of Law and her BS from Cornell University.

Thomas P. Bishop

Thomas (Tom) P. Bishop is currently vice president and associate general counsel for Southern Company Services, Inc., in Atlanta, Georgia. He joined Southern Company as staff attorney, moving through several positions, including managing attorney.

Mr. Bishop is a member of the State Bar of Georgia sections on corporate counsel section, trial practice, and computer and technology; past chairman of Younger Lawyers Section Legislative Affairs Committee. He is also a member of ACC and chair of ACC's Energy Committee. Mr. Bishop is the immediate past chairman of the board – State YMCA of Georgia; chairman of the board – Pro Bono Partnership of Atlanta; Kappa Sigma Fraternity Endowment Fund trustee and secretary; and past national president of Kappa Sigma Fraternity.

Mr. Bishop received his JD, cum laude, from Walter F. George Law School, Mercer University and his BA, summa cum laude from Mercer University.

W. Brinkley Dickerson Jr.

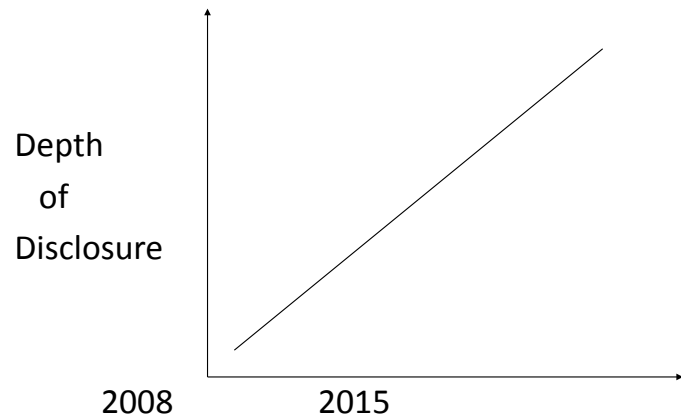
W. Brink Dickerson Jr. is a partner with the law firm of Troutman Sanders LLP in Atlanta, Georgia. The primary focuses of his practice are securities law and mergers and acquisitions. Mr. Dickerson also advises a number of publicly traded companies on a more occasional basis and regularly advises e-commerce and other start-ups with respect to venture capital and other financing issues. Mr. Dickerson serves as national securities disclosure counsel for a major trade association and its members. Mr. Dickerson also serves as special counsel to boards of directors and special committees with respect to governance, takeover, and investigatory matters. In the mergers and acquisitions area, Mr. Dickerson has been responsible for over 100 transactions including five tender offers and acquisitions in over 20 different industries.

Mr. Dickerson is a regular speaker on securities and transactional matters. He formerly was the chairperson of the corporation and business law committee of the Chicago Bar Association and for several years was the chairman of the mergers and acquisitions committee. He also is a member of the Georgia Bar Association.

Mr. Dickerson earned his BBA, MBA, and JD, with honors, from Emory University.

Climate Change For Business

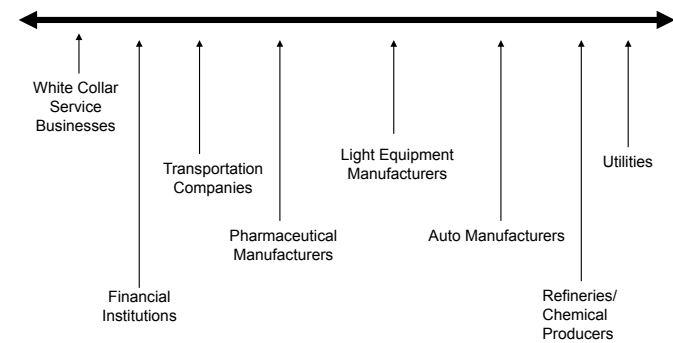
W. Brinkley
Dickerson, Jr.



Some Assumptions:

- Global warming – i.e., the gradual warming of the atmosphere due to the increase of CO₂
- Governments will regulate CO₂ emissions, most likely through a cap and trading system, but possibly otherwise
- The cost of fossil generated energy will increase substantially; existing alternatives remain inadequate
- There may be other impacts

Implications to Everyone



Core Disclosure Requirements . . . Today

- Regulation S-K, Item 101 – Description of Business
- Regulation S-K, Item 103 – Legal Proceedings
- Regulation S-K, Item 303 – MD&A
- Regulation S-K, Item 503 – Risk Factors

More on these Later

- ii. financial risks and opportunities associated with present or probable greenhouse gas regulation; and
 - iii. legal proceedings relating to climate change
- The petition was based primarily on the findings in the Fourth Assessment Report released earlier last year by the Intergovernmental Panel on Climate Change

CERES Petition

- In September 2007, a 22-member coalition petitioned the SEC to issue an interpretive release to clarify that, under existing law, registrants must disclose any and all material information relating to climate change, which disclosure may require information relating to:
 - i. physical risks associated with climate change that are material to the company's operations or financial condition;

- The petition asserted that certain companies have likely crossed the threshold set forth in Financial Accounting Standards No. 5, *Accounting for Contingencies*, for disclosing material contingent liabilities that can be expressed on a company's balance sheet
- Petition was supplemented in June 2008
- A new petition was filed by a similar coalition on September 9, 2008 with respect to the oil, gas and coal industries

Senate Consideration

- In October 2007, the Senate Committee on Banking, Housing and Urban Affairs, Subcommittee on Securities, Insurance and Investment, conducted a hearing concerning the CERES petition:
 - The Committee heard from four witnesses with contrasting points of view on the level of necessary disclosure at this time
 - Dr. Gary Yohe – Climate risks may be so indefinite that it would be unfair to require companies to disclose currently
 - Mindy Lubber – Requiring disclosures is not only possible at this time, but such disclosure would make a difference in helping reduce the world's carbon footprint
 - Jeffery Smith and Russell Read – Took positions in between those of the other two witnesses
 - During the hearing, Sen. Tom Carper (D-DE), announced that he planned to include mandatory disclosure language into the pending Warner-Lieberman global climate change legislation

- All the witnesses indicated that the SEC already has the authority to require the disclosures without legislative action
- We expect further hearings

New York AG Subpoenas

- In September 2007, the New York Attorney General issued subpoenas to five energy companies, including Xcel (the “Gang of Five”), requesting information regarding emissions and disclosures relating to climate change
- A letter accompanying the subpoenas asserted the AG's concern that the companies may not have adequately disclosed to their shareholders the “financial, regulatory, and litigation risks relating to greenhouse gas emissions”

- The subpoenas were issued pursuant to the AG's authority under the "Martin Act" to investigate and prosecute "fraudulent activities" related to the sale or exchange of securities
- Eight other states have similar laws with varying degrees of authority for their administrators

business and an assessment of "the potential material financial effect of the legislation . . . , including a discussion of the factors that may affect" Xcel's business

- Any pending litigation and any material climate change-related appellate decisions by Federal Courts
- Material financial risks from the "physical impacts" associated with climate change
- Xcel's current "position" on climate change

Settlement With Xcel Energy: Does It Set the Floor?

Xcel agreed in August 2008 to disclose (or continue to disclose):

- The "material financial risks to Xcel Energy associated with GHG emissions," including
 - identifying GHG legislation in effect and "an analysis of the material financial effect of the legislation," and
 - a discussion of "expected trends in GHG legislation . . . likely to be adopted that would have a material financial effect" on Xcel's

- Xcel's GHG emissions (in tons), expected increases in GHG emissions, strategies to reduce its climate change risk, results of strategies to date; and expected future impact of strategies
- Corporate governance actions concerning climate change, the role of Xcel's Board of Directors, and whether environmental performance is incorporated in compensation.

Cuomo: "This landmark agreement sets a new industry-wide precedent that will force companies to disclose the true financial risks that climate change poses to their investors."

financings posed by the prospect of domestic CO₂ emissions controls through the application of an "enhanced diligence process." Use the results of the diligence as a contribution to the determination whether a transaction is eligible for financing and under what terms.

- Educate clients, regulators, and other industry participants regarding the additional diligence required for fossil fuel generation financings, and encourage regulatory and legislative changes consistent with the Principles.

Wall Street Carbon Principles

The adopters -- Citi, JP Morgan Chase, Morgan Stanley, Bank of America and Wells Fargo (so far) -- committed to:

- Encourage clients to pursue cost-effective, renewable energy and other low carbon alternatives to conventional generation, taking into consideration the potential value of avoided CO₂ emissions.
- Ascertain and evaluate the financial and operational risk to fossil fuel generation

The enhanced due diligence includes review of carbon mitigation plans, independent assessment, possibly by third-parties, of "risks from potential CO₂ costs" and demand forecasts, consultations with "constituencies," and reporting

Deeper Look at Current Disclosure Requirements

Regulation S-K, Item 101(a) – Description of Business

Describe the general development of the business of the registrant, its subsidiaries and any predecessor(s) during the past five years

Regulation S-K, Item 101(c)(1)(xii) – Description of Business

Appropriate disclosure also shall be made as to the material affects that compliance with [environmental laws] which have been enacted or adopted regulating the discharge of materials . . . may have upon the capital expenditures, earnings and competitive position of the registrant and its subsidiaries. . . .

- Many companies rely on risk factor and MD&A disclosure to address climate change issues.
- This is based upon a technical reading of Item 101 and Item 101's focus on the company as it exists today and its recent development and regulations that "have been enacted or adopted" as contrasted with regulations that have been "proposed" or "contemplated" or that might be "possible."
- Also, courts generally will review a document in its entirety, thereby providing some forgiveness for misplaced disclosure.

Disclosure in response to Item 101 could include a discussion of:

- The background to the climate change concerns, including a general discussion and a summary of the Kyoto and other international efforts to address climate change.
- Regional and state regulatory initiatives, where applicable.
- Possible Federal regulatory initiatives, including the implementation of a cap and trading system.

- A description of the company's greenhouse gas emissions profile including, where quantification otherwise has been publicly disclosed, quantification. (This disclosure might not be on a plant by plant basis, but in the aggregate or by plant type and could disclose the challenges and lack of certainty in measuring greenhouse gas emissions.)
- Company plans for emissions reduction and related initiatives.
- Expansion plans that could increase emissions.

- Acknowledgement that climate change concerns could result in significant capital investments in order to reduce emissions, could increase the cost of producing electricity, and could impact customers in a variety of different ways.

None of these elements may be required, and in a particular situation the emphasis may be on one or only a few of them. Collectively, the disclosure should give investors insight into the issue as it impacts the company.

Regulation S-K, Item 103 – Legal Proceedings

Describe briefly any material pending legal proceedings, other than ordinary routine litigation incidental to the business, to which the registrant or any of its subsidiaries is a party or of which any of their property is the subject. . . . [A]n administrative or judicial proceeding . . . arising under any [environmental laws] shall not be deemed "ordinary routine litigation incidental to the business" and shall be described if . . .

It is unlikely that this requirement is triggered at the current time:

- Existing private actions appear to be frivolous.
- Federal climate change related regulation is only under preliminary consideration in Congress, and state level regulation focuses primarily on reporting and not the limitation of emissions or other aspects of climate change.
- Subpoenas from, *e.g.*, a state attorney, general or another form of investigation, with nothing more, might not require

disclosure unless they reflect “proceedings known to be contemplated” by a governmental authority.

However, at some time in the future, *e.g.*, as regional regulation becomes effective or is expanded or once there is Federal regulation, this requirement may be triggered for a number of companies, and the SEC previously has taken the position that where a company has a policy or approach toward compliance that is “reasonably likely to result in substantial fines,

penalties or other significant effects” on the company, disclosure may be required. In addition, where a company voluntarily makes disclosure regarding its climate change posture or environmental policies, that disclosure must accurate and complete. *See, United States Steel Corp., SEC Exchange Act Release No. 34-16223 (Sept. 27, 1979).*

Regulation S-K, Item 303(a)(1) - Liquidity

Identify any known trends or any known demands, commitments, events or uncertainties that will result in or that are reasonably likely to result in the registrant's liquidity increasing or decreasing in any material way.

Regulation S-K, Item 303(a)(3)(ii) – Results of Operations

Describe any known trends or uncertainties that have had or that the registrant reasonably expects will have a material favorable or unfavorable impact on net sales or revenues or income from continuing

operations. If the registrant knows of events that will cause a material change in the relationship between costs and revenues (such as known future increases in costs of labor or materials or price increases or inventory adjustments), the change in the relationship shall be disclosed.

Scientists and others may disagree whether climate change is a “known trend,” but it is difficult to not to address it as an “uncertainty,” which effectively requires the same disclosure.

- The possibility that an increase in energy costs will negatively impact revenue and financial performance.
- The possibility that customers and vendors independently will be impacted by climate change.

Disclosure in response to the MD&A requirements could include a discussion of:

- The possibility that a company will have to limit its emissions of greenhouse gases,
- The lack of established technology that will significantly reduce greenhouse gas emissions and the uncertainty regarding when that technology will be available.
- The likelihood that the company will be required to incur substantial capital expenditures to comply with any new emissions requirements.

None of these elements may be required, and in a particular situation the emphasis may be on one or more or only a few of them.

It would be surprising to see companies in any way attempt to quantify the ultimate financial impact of potential Federal or other legislation. At this time, this type of disclosure would be speculative and, thereby, risky at best.

It may be advisable to recognize that some impacts are “likely” rather than simply “possible.” Few experts doubt, for instance, that in due course Congress will impose a cap and trading system. It would be of little detriment for a company to acknowledge that likelihood.

Note that although it may be helpful in a legal dispute, risk factor disclosure is not a substitute for “known trends and uncertainties” disclosure.

Most companies already have one or a few environmentally related risk factors. Generally, however, they address simply the possibility of additional regulation and the attendant cost of compliance or the implications of non-compliance. Very few address climate change directly.

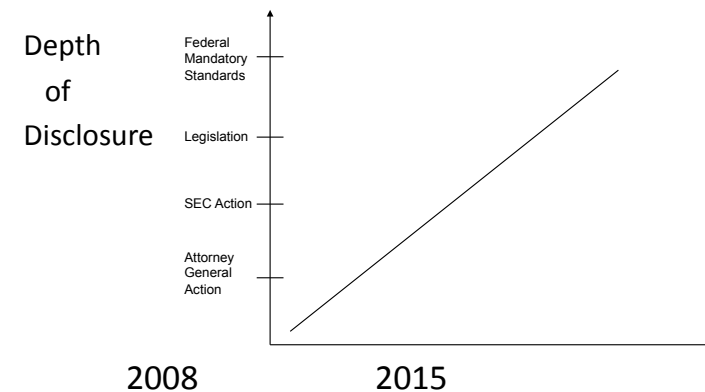
Regulation S-K, Item 503 Risk Factors

Where appropriate, provide under the caption "Risk Factors" a discussion of the most significant factors that make the offering speculative or risky. This discussion must be concise and organized logically. Do not present risks that could apply to any issuer or any offering. Explain how the risk affects the issuer or the securities being offered. Set forth each risk factor under a subcaption that adequately describes the risk.

Some companies resist including robust risk factors and argue that they are needed only where a business is “speculative or risky,” and what could be safer than a utility or refinery. This is not a helpful perspective and does not recognize that risk factor disclosure can form the basis for an effective safe harbor for forward looking statements under the Reform Act.

Disclosure in response to the risk factor requirements could include a discussion of:

- The risk that the imposition of a cap and trading system or other limitations on the emission of greenhouse gasses will require a company to incur substantial capital costs and increase operating expenses.
- The risk that an increase in energy costs will negatively impact revenue and financial performance.



Takeaway: Companies need to be increasingly sensitive to disclosure in this area.

- The risk that the demand for a company's service or product will decline.
- The risk of litigation, frivolous or not.

The list of possible risks is almost unlimited, although the risks suggested above encompasses many of the basic ones. Also, the risks are similar to the uncertainties that could be disclosed in a MD&A.

Climate Risk
and Enterprise Risk Management

Kathleen T. Barlow

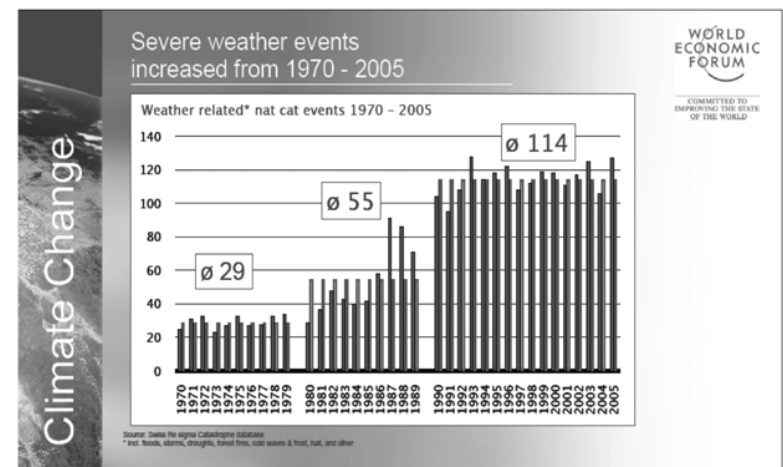
Typical Risks Associated with Climate Change

- Changing weather patterns causing storms, wildfires, windstorms, sea-level rise, heat waves

Generally Accepted Risks Associated with Climate Change:

- Changing weather patterns have effect on a variety of client issues including:
 - Facility operations
 - power transmission
 - transportation
 - communication
 - supply chains
 - general operations
 - distribution chains
 - Health Risks
 - new disease vectors
 - loss of basic resources to maintain quality of life
 - Lost Business Resources
 - water supplies
 - forest resources

Changing Weather?



Managing Climate Change Risks

Macro Implications for Public Policy Who bears the risk?

- Flood Insurance
- Coastal land use planning & building standards
- Land use planning & forest management
- Insurance price flexibility – risk based-insurance similar to investment decisions
- Support for climate change science

*Source: Hartford Financial Services Group, Statement on Climate Change

Organizational Response to Climate Change

Adaptation

- Maintain competitive advantage-your supply chain risk, natural catastrophe cover
- Strategic direction-if climate changing, how will products and services fair in the future
- Uncertainty for insurance industry-potentially huge costs, unknowns, US modeling is inadequate to predict future climate risk.

Mitigation

- Reducing corporate footprint
- Voluntary programs-Energy Star, LEED, clean technology

Assessing an Organization's Climate Risks

Numerous business risks:

- Physical Risk
- Financial Risk
- Strategic Risk
- Shareholder Risk
- Litigation Risk
- Competitive Risk
- Reputational Risk
- Regulatory Risk

Each Risk Viewed in Context of....

- Mounting intensity of climate litigation
- Increasing intensity of climate legislation
- Increasing focus on regulatory concerns - Xcel
- Some risks are avoidable – others are not
- First movers are creating and staking out opportunities providing market advantage

Strategic Risk

- Companies that fail to manage climate change risks may lose their competitive advantage
- Managing Strategic Risks
 - Enterprise Threats
 - Competitive advantage
 - Aggressive development of new products results in leadership

Physical Risk

– Operations

- “Green” buildings/structures
- Power generation/transmission
- Transportation of products/intermediaries/waste
- Business resources
- Supply chains
- Distribution Chains

– Managing physical risks

- Less vulnerability to global turmoil
- Business partners that actively manage climate change risks

*Source: Innovest Retail Foods Energy Analysis

Financial Risk

- **Fiduciary Responsibility to Address Climate Change Risks**
- **Investors challenge transactions over issue of climate change**
- **Investors seek greater clarity on the drivers of intangible value**
- **Surveys indicate climate change grows in importance to investors**
- **Managing Fiduciary Risks**
- **Energy management-indicator of management quality reputation- possible indicator of superior intangible value and stock market potential.***

*Source: Innovest – Retail Foods Energy Analysis

Shareholders Are Increasing the Pressure:

- **Shareholder Risks**
 - Fiduciary responsibility to address climate risk
 - potential to impact a Fund's investments over long term
- **Managing Shareholder Risks**
- **Three typical questions asked by shareholders:**
 - What policies and procedures are in place to evaluate financial consequences of climate change?
 - What action is being taken to maximize shareholder value in light of current and anticipated climate change regulations?
 - How many tons of GHG are emitted and what steps being taken to reduce emissions?
- Surveys show climate change will grow in importance over time to investors as the potential environmental and health impacts are increasingly studied and confirmed.

Lawsuits Have Begun:

- **Factors:**
 - Possible links - human activity to global warming
 - Developing concerns over legal liability due to linkage
 - Current emissions standards being brought into litigation
- **Managing Litigation Risks**
- Likely the most challenging of the risks
 - Difficult to determine the assessment of blame, and therefore damages
 - Just as in asbestos cases, "deep pockets" were tapped
 - Effective management of climate change risks will lead to clearer contention that company followed own best practices and acted in good faith

A Competitive Edge Awaits

- **Competitive Risks**
 - Failure to manage their climate change risks
- **Competitive Risk**
 - Failure to manage their competitive advantage
- Environmental risks increase the climate change risks may lose their competitive advantage (financial, regulatory, shareholder, litigation and reputational risks)
 - Significant increase in energy costs and
- Not meeting shareholder expectations and results in:
 - Projecting a negative environmental image
 - Not meeting shareholder expectations and
 - Projecting a negative environmental image
- **Managing and Creating Competitive Risks**
 - Appropriate management of traditional climate change risks, regulatory, shareholder, litigation and reputational may gain competitive advantage.
 - Companies aggressively developing new products as part of environmentally friendly strategies (ex. Hybrid autos, wind energy, energy efficient building)

Reputational Risk-reputations are on the line

- **Reputational Risks**
 - Climate change visibility increase among consumers
 - Potential loss of market share if company not addressing climate change
 - Companies promoting themselves as "climate change" friendly (carbon neutral pledges)
 - Claims of "energy efficiency" vs real effects on climate change
- **Managing Reputational Risks**
 - Market share gains for climate change leaders
 - Conservative – but true carbon neutral pledges
 - Public perception on environmental management

Regulatory Risk

Regulatory Risks

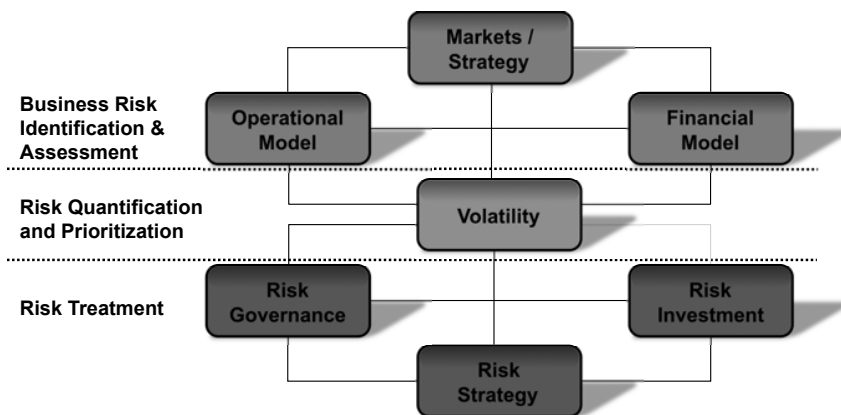
- Xcel Agreement – NY-September 2008
- Evolving standards for public company disclosure of climate risk

Managing Regulatory Risks

Companies that make informed efforts to reduce emissions now might find themselves in better position to meet future regulations

- Action Plan for addressing Climate Change issues
- Understand physical risks of climate change and plans for adaptation. Acknowledge future challenges of risk transfer, insurance, financing.
 - Learn from industry groups-specific risks of climate change.
 - Anticipate future mandatory disclosure of impact climate change.
 - Guide company on legal and reputation risks of climate change public statements/policy statements.
 - **Integrate climate change risk into internal governance procedures to keep in line with the existing financial, corporate risk identification, controlling and reporting structures and best practice in supporting requirements.**

Excellence In Risk Management



Disclaimer

The information contained herein is based on sources we believe reliable, but we did not verify nor do we guarantee its accuracy. It should be understood to be general risk management and insurance information only. Marsh makes no representations or warranties, expressed or implied, concerning the financial condition, solvency, or application of policy wordings of insurers or reinsurers nor does Marsh make any representations or warranty that coverages may be placed on terms acceptable to you. The information contained in this publication provides only a general overview of subjects covered, is not intended to be taken as advice regarding any individual situation, and should not be relied upon as such. Statements concerning tax and/or legal matters should be understood to be general observations based solely on our experience as risk consultants and insurance brokers and should not be relied upon as tax and/or legal advice, which we are not authorized to provide. Insureds should consult their own qualified insurance, tax and/or legal advisors regarding specific risk management and insurance coverage issues. Marsh assumes no responsibility for any loss or damage sustained in reliance of this presentation.

Marsh is part of the family of MMC companies, including Kroll, Guy Carpenter, Mercer, and the Oliver Wyman Group (including Lippincott and NERA Economic Consulting).

The materials, data and/or methodologies used in this presentation are proprietary to Marsh. This document or any portion of the information it contains may not be copied or reproduced in any form without the permission of Marsh Canada Limited, except that clients of any of the companies of MMC need not obtain such permission when using this report for their internal purposes, so long as this page is included with all such copies or reproductions.

Copyright 2008 MarshUSA. All rights reserved.

M070903 (C070908TP); 2007/09/14

Climate Change: Legislative Update

Melissa M. Allain

Lawrence Livermore National Laboratory: A Multi-disciplinary National Security Laboratory

- Energy security and human health
 - Energy technologies
 - Climate and earth systems
 - Health and environmental science
- Threat reduction
 - Non- and counter-proliferation
 - Counterterrorism and homeland security
 - Global and regional security
- Nuclear deterrence
 - Stockpile Stewardship Program
 - Defense technologies
- Owned by U.S. Department of Energy
- Managed under contract by Lawrence Livermore National Security, LLC, whose members include the University of California and Bechtel

Climate Change Activities at LLNL

- LLNL's Atmospheric, Earth and Energy Division
 - Supports U.S. DOE's Office of Science Climate Change Prediction Program, which coordinates research to advance the science of climate prediction
 - Conducts computer-based simulations of climate to understand and forecast potential climate changes at regional to global scales
- The Lab houses DOE's Office of Science Program for Climate Model Diagnosis and Intercomparison (PCMDI), which develops improved methods and tools for the diagnosis and intercomparison of general circulation models that simulate the global climate
 - LLNL is also assembling observational data sets for model validation, documenting climate model features, and developing software for data management, visualization, and computation
- More than 40 LLNL employees were key scientific contributors to the reports of the Intergovernmental Panel on Climate Change, which won the 2007 Nobel Peace Prize

Historical Perspective

- 1987 - Montreal Protocol – chlorinated fluorocarbons (CFCs) - acid rain reduction to limit further damage to ozone layer
- December 1997 - Kyoto Protocol
 - First commitment 2008 – 2012
 - EU adopted EU Emissions Trading Scheme in 2003
 - Reduce emissions by 5.2% below 1990 levels by 2012
- 2007
 - U.S. Climate Action Partnership issued "A Call for Action" seeking national legislation for consistency
 - International Carbon Action Partnership established 10/29; members include Canada, EU, New Zealand, Norway, and (US-based) RGGI members

Key Climate Change Legislation

- California
 - Global Solutions Warming Act of 2006 (AB32)
- Regional Greenhouse Gas Initiative
- Western Climate Initiative
- Other Initiatives: U.N. Programme

¹Unless otherwise stated, the information was taken from the organization's website or from documents/websites embedded in the presentation

Distinguishing Factors

- Point of regulation
 - Upstream
 - E.g., point of fossil fuel extraction, processing, first distribution or import
 - Allowance cost is included in the fuel price
 - Downstream
 - E.g., each greenhouse gas generator
 - Downstream customer pays separately for both the allowance cost and fuel
- Carbon allowances –
 - Auction and/or free distribution to reduce cost burden, stimulate economy or for other social benefits
 - Discretion to bank or borrow to adjust to different economic factors
- Impact on local, regional, national and global economies

Distinguishing Factors

- Key considerations to all legislative proposals include
 - Scope of coverage
 - Type of greenhouse gases (GHG), e.g., CO₂, methane, nitrous oxide, halocarbons, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride
 - Type of emissions
 - Timetable and target emission reductions
 - Baseline year

Policy Considerations

- Cap and Trade -
- Emission Reduction Credits
 - Reductions reported from one generator may be sold to others to offset their obligations under a cap
- Carbon Emission Taxes
- Command-and-Control Standards
 - Energy efficiency or emission performance standards, e.g., the federal Corporate Average Fuel Economy Standards
- Greenhouse gases: Commodity or currency?
 - Government-sanctioned units of exchange that can be banked and borrowed

Climate Change – Federal Legislation

- Through June 2008, the 110th Congress has introduced approximately 235 bills related to climate change²
- Little progress was made on previously reported bills during 2008, and legislators are already drafting new proposals for the 111th Congress.

²This statistic comes from the PEW Center on Global Climate Change; the PEW Center also provides background information on the Senate Proposals

³Details on the House Bills are provided by Environmental Defense, a non-profit organization; both Environmental Defense and the PEW Center provide details of Senate Bills

California in the Driver's Seat

- California has been ranked as the 12th largest emitter of GHGs in the world. Taking the lead in reducing GHGs can have global impacts, and provide a competitive advantage.
- California has been the only state that may seek a waiver from federal preemption under the federal Clean Air Act to implement air emission controls or standards more stringent than federal regulations.
- If the U.S. Environmental Protection Agency grants California a waiver, then other states may elect to enact similarly more stringent provisions. This has enabled California to take the lead historically in implementing new standards and controls, e.g., NOx emissions from motor vehicles.

California Climate Change Measures

- AB 32 - Global Warming Solutions Act of 2006
- Executive Order S-3-05, Climate Action Team
- AB 1493 - new auto emission standards
- SB 1368 – limits on power plant investments
- SB 97 – new guidelines to mitigate GHGs in land use projects
- SB 85 – GHG emissions reduction report card by Cal-EPA

AB 32 - California Global Warming Solutions Act of 2006

- Approved by the Governor on September 27, 2006, effective January 1, 2007
- Creates a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California to 1990 levels - 30%- by 2020

AB 32 – Next steps

- November 2008
 - Gov. Schwarzenegger will host a two-day summit with provincial governments from China and India, European nations, Australia, Canada and Mexico
 - Scoping plan expected to be adopted
- December 2008
 - SmartWay voluntary truck efficiency retrofits to be presented to ARB

AB 32 – Six Discrete Early Actions in 2008-2009

1. Reduce high global warming potential (GWP) GHGs used in consumer products
3. Reduce PFCs from semiconductor industry
4. SmartWay freight truck efficiency
5. Low Carbon Fuel Standard
6. Reduce HFC-134a emissions
7. Implement standards at landfills for gas collection and control systems

AB 32 – Other Discrete Early Actions

- Slated to be presented to the Board early in 2009:
 - Sulfur hexafluoride (SF₆) reductions in the non-electric sector as feasible
 - Tire inflation program
- “Green Ports”
 - Electrification of six major ports in California to allow docked ships to turn off their auxiliary engines by plugging into shoreside electrical outlets
 - Approved by the Air Resources Board in late 2007, with modifications yet to be released for public comment

AB 32 – Next steps

- 2009 - first annual reporting by sources that generate the most statewide emissions would be required on 2008 GHG emissions
- 2010 - reporting verification requirements by ARB-approved third parties would begin
- 2012 – begin reducing emissions
- 800 total facilities affected statewide, with an estimated annual cost of \$21-30 million

AB 32 - Projected Health and Economic Benefits

- California's Air Resources Board completed a study in 2008 finding that AB 32 will create
 - 100,000 new jobs
 - \$27 billion "boost" to economy
 - Cleaner air, resulting by 2020 in
 - 300 fewer premature deaths per year
 - 53,000 fewer lost work days
 - 9,000 fewer incidences of asthma and lower respiratory symptoms

Proposition 7⁵

- Will be on the November 4, 2008, ballot in California
- Current law requires Investor Owned Utilities (IOUs) and Electric Service providers (ESPs) to increase the amount of electricity they acquire that is generated from renewable resources, such as solar and wind power. This requirement is known as the renewables portfolio standard (RPS).
- Each electricity provider subject to the RPS must increase its share of electricity generated from eligible renewable resources by at least 1 percent each year so that, by the end of 2010, 20 percent of its electricity comes from renewable sources.

⁵Information provided by the Legislative Analyst's Office

Proposition 7:

California Ballot Initiative

Proposition 7

- Proposition 7 modifies RPS and the permitting of electricity generating facilities and transmission lines:
 - Additional, higher RPS targets for electricity providers.
 - Makes RPS requirements enforceable on publicly owned utilities.
 - Changes the process for defining "market price of electricity."
 - Changes the cost cap provisions that limit electricity provider obligations under the RPS.
 - Expands scope of RPS enforcement.
 - Revises RPS-related contracting period and obligations.
 - Sets a lower penalty rate in statute and removes the cap on the total penalty amount for failure to meet RPS requirements.
 - Directs the use of RPS penalty revenues.
 - Expands Energy Commission's permitting authority.

Regional Legislative Initiatives

- (Northeastern) Regional Greenhouse Gas Initiative
- Western Regional Initiative

Regional Greenhouse Gas Initiative (RGGI)

- RGGI is a non-profit corporation created to support development and implementation of the ten participating states' CO₂ Budget Trading Programs
- Ten member states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont

Regional Greenhouse Gas Initiative

- Each of the signatory states commits to propose the Program substantially as reflected in the Model Rule developed by the RGGI
- As of September 2008, six of the states have approved regulations based on the model rule; the environmental protection departments of the other four states are all in the process of approving regulations

¹Information retrieved from each state's environmental protection department's websites

RGGI - Overview

- Downstream cap-and-trade program
- Limits CO₂ emissions from power sector sources
- Target caps
 - First, *cap emissions to current levels from 2009 – 2014*
 - From 2015 - 2019, emissions cap will decrease 2.5% annually
 - Ultimately, emissions will be targeted to 10% below current emissions in 2019
- At least 25% of participating states' allowances must be auctioned
 - Proceeds must be used for energy efficiency and consumer-related improvements

Western Climate Initiative (WCI)

- Launched in February 2007 by the Governors of Arizona, California, New Mexico, Oregon and Washington to develop regional strategies to address climate change
- Later joined by Utah, Montana, British Columbia, Manitoba, Quebec, and Ontario
- Other U.S. and Mexican states and Canadian provinces have joined as observers
- WCI is identifying, evaluating and implementing collective and cooperative ways to reduce greenhouse gases in the region

Western Climate Initiative (WCI)

- Like the RGGI, the WCI is working towards creating a model rule that can be adopted by all partners
- In September 2008, the WCI released design recommendations for the WCI cap-and-trade program as well draft essential requirements of mandatory reporting
- ICF International completed an economic analysis and modeling support to the WCI

Federal Legislation and Proposals

- Energy Independence and Security Act of 2007
 - CAFE standards of 35 mpg for cars and light trucks by 2020
- S2191: Lieberman Warner Climate Security Act of 2008
- S280: Climate Stewardship and Innovation Act (McCain/ Lieberman)
- S309: Global Warming Pollution Reduction Act
- S485: Global Reduction Warming Act (Kerry/Snowe)
- S1766: Low Carbon Economy Act
- HR620: Climate Stewardship Act (Olver/Gilchrist)
- HR1590: Safe Climate Act of 2007 (Waxman)

Energy Independence and Security Act of 2007

- Key Provisions
 - Corporate Average Fuel Economy (CAFE) standards: sets a target of 35 mpg for cars and light trucks by 2020
 - Modified standard of Renewable Fuel, beginning at 9 billion gallons in 2008 and rising to 36 billion gallons by 2022 (21 billion to be obtained by cellulosic ethanol and other advanced biofuels)
 - Appliance efficiency standards and lighting energy efficiency

Energy Independence and Security Act of 2007

- Appliance Energy Efficiency
 - New standards for external power supplies, residential clothes washers, dishwashers, dehumidifiers, refrigerators, freezers, electric motors and residential boilers
 - Federal agencies directed to limit standby power use
 - DOE required to complete rulemaking process for furnace fans by 2013; directed to issue final rule setting efficiency standards for battery chargers
- Lighting Energy Efficiency
 - Sets energy efficient standard for general service incandescent lamps, reflector lamps, metal halide lamp fixtures, and fluorescent lamps
 - Requires consumer education and awareness program
 - Energy efficiency requirements for GSA-leased space

AB 1493 vs. Federal Legislation

- CAFE standards cited in EPA's letter to California regarding denial of waiver
- ARB produced a technical assessment in response to this comment, indicating that California's 1493 provisions would be more effective at reducing GHG emissions than the CAFE standards

AB 1493 vs. Federal Legislation

- California appealed EPA's denial to the U.S. Court of Appeals, Ninth Circuit, on January 2, 2008 (Case No. 08-70011); the court dismissed the appeal due to lack of jurisdiction as the letter sent to the Governor was not reviewable "final action" under the Clean Air Act
- Senator Barbara Boxer introduced S.2555 on January 24, 2008, to allow California's emission standards to take effect
 - This bill has been placed on the Senate Legislative Calendar under General Orders

Legislative Initiatives in Other States

Massachusetts “Green Jobs” Act²

- Signed by the Governor on August 13, 2008: Chapter 307 of the Acts of 2008
- Backed by \$68 million funding over five years
- The Act creates the Massachusetts Clean Energy Technology Center within the Executive Office of Energy and Environmental Affairs (EEA) to administer a new Massachusetts Alternative and Clean Energy Investment Trust Fund. This Trust Fund is intended to provide grant money for companies and universities that encourage the training of workers for environmentally-friendly jobs and also encourage startups to focus on green development.

²Information provided by Beveridge & Diamond, P.C., a Washington D.C. law firm, from their website: <http://www.beveridgediamond.com/news-371.htm>

Massachusetts Global Warming Solutions Act³

- Signed by the Governor on August 7, 2008: Chapter 298 of the Acts of 2008
- The Act contains a framework for reducing GHG emissions across the economy over a period of 40 years, mandating GHG reductions of 80 percent over 1990 emission levels
- The Act mandates that the EEA establish statewide GHG emission limits as follows:
 - GHG limits effective in 2020, which must be between 10 to 25 percent below statewide GHG emissions in 1990,
 - Interim limits for 2030 and 2040
 - GHG limits effective in 2050, which must be at least 80 percent below statewide GHG emissions in 1990.

³Information provided by Beveridge & Diamond, P.C., a Washington D.C. law firm, from their website: <http://www.beveridgediamond.com/news-371.htm>

Massachusetts Global Warming Solutions Act

- Massachusetts Department of Environmental Protection must determine what the baseline statewide emissions of GHG were in 1990
- EEA must produce a plan for achieving the maximum technologically feasible reduction of statewide emissions every five years
- EEA must also perform an evaluation of the total potential costs and benefits of various reduction measures to the economy

United Nations Development Programme (UNDP)

- UNDP is the UN's global development network, an organization advocating for change and connecting countries to knowledge, experience and resources to help people build a better life
- UNDP's goals include working with countries on their own solutions to global and national development challenges, including Energy and Environment
- UNDP has issued a report outlining their climate change program

California Collaboration with U.N. and China

United Nations Development Programme (UNDP)

- In April 2008, California signed an agreement with the UNDP to assist its ongoing work with the Chinese government
- UNDP asked California to serve as a climate program model to provincial governments
- California has agreed to share academic research, effective policy initiatives, lessons learned and technological innovation
- The agreement's key components include:
 - Coordinate on activities that support the development of national and local strategies and actions for climate change mitigation and adaptation in China.
 - Communicate regularly with officials to share valuable information to help integrate best practices from the California climate change strategy
 - Help mobilize support from public and private partners in California to support climate change strategies

Resources

- PEW Center on Global Climate Change:
<http://www.pewclimate.org/global-warming-basics>
(for analysis and tracking of federal legislation)
- *A Meaningful U.S. Cap and Trade System to Address Climate Change*, R. N. Stavins, 32 Harvard Environmental Law Review 293 (2008)
- *Carbon: Commodity or Currency? The Case for an International Carbon Market Based on the Currency Model*, J. Button, 32 Harvard Environmental Law Review 571 (2008)

Potential CO2 Regulation Under The Clean Air Act

Outline

- Massachusetts v. EPA
- CO2 under the Clean Air Act (ANPR)
- Related impacts
- Issues for lawyers

Disclaimer

The opinions contained in this presentation are those of the speaker and have not been authorized, approved by, or necessarily represent the policy or position of the speaker's employer, the organization hosting this conference, or any entity sponsoring this conference.

Your mileage may vary.

Massachusetts v. EPA

549 U.S. 497 (2007)

- Issues:
 - Does EPA have authority to regulate CO2 as a pollutant under CCA?
 - What is scope of EPA's discretion not to regulate?
- Holding:

"EPA has offered no reasoned explanation for its refusal to decide whether greenhouse gases cause or contribute to climate change."

CCA Framework

EPA's Threshold determinations:

- Does CO₂ pose a threat to public health and welfare? (Positive Endangerment)
- Is regulation feasible?

Positive Endangerment =

- Prevention of significant deterioration (PSD) permit program
- Emission level set @ 250 tons of CO₂ per year
- Regulation of stationary sources with:
 - NAAQS, NSPS & MACT
 - HAPs

EPA ANPR published July, 2008

NAAQS (§108)

- National Ambient Air Quality Standards
- Each state has 1 yr. to designate non-attainment areas
- Each state has up to 3 yrs to submit a State Implementation Plan (SIP) (including enforcement) for EPA approval

NAAQS (cont'd)

- CO₂ is uniformly distributed in the atmosphere.
- Therefore, entire U.S. either
 - immediately in attainment, or
 - immediately in non-attainment

NSPS (§111)

- EPA must list sources of CO2
- EPA issues a New Source Performance Standard (NSPS) for each source based on “best system of emission reduction.”

>200K Regulated Buildings

Buildings Heated by Natural Gas	,000's
Education	213
Food Sales/Service	324
Health Care	72
Lodging	86
Mercantile	245
Office	488
Public Assembly	146
Public Safety	36
Religious	220
Service	281
Warehouse/Storage	187
Other	45

Energy Information Administration, 2003 Commercial Buildings Energy Consumption Survey, Table C23

NSPS (cont'd)

- Maximum Achievable Control Technology standard (MACT §112)
- If there is either an NAAQS or MACT, NSPS applies only to new sources or modifications
- If neither, then NSPS also includes existing sources

Other Potential Sources:

- Dairy farm with more than 60 cows
- 500 acres of crops (fertilizer & machinery)
- Transportation fleets
- Non-road engines (construction, mining, mowers, locomotives, boats, generators)

Scope of EPA's Authority ...

...[I]f EPA were to regulate greenhouse gas emissions from motor vehicles under the Clean Air Act, then regulation of smaller stationary sources that also emit GHGs – such as apartment buildings, large homes, schools, and hospitals – could also be triggered. ***One point is clear: the potential regulation of greenhouse gases under any portion of the Clean Air Act could result in an unprecedented expansion of EPA authority that would have a profound effect on virtually every sector of the economy and touch every household in the land.***

ANPR, pg. 6 (emphasis added.)

Related Impacts

- Unfunded mandates
- Impact on energy/fuel prices
- Impact on feed stocks
- Impact on the economy

NEMS

- National Energy Model System
- Key Assumptions:
 - Existence of equipment
CCS, Biomass, Clean coal technologies, etc.
 - Date of commercial availability
 - Rate of expansion
Nuclear, Wind, Solar, Offsets/Retirements

EPA's NEMS on L/W (2030)

- 44 new nuclear units
- 3 GW wind
- 3 GW solar
- 500 GW existing coal retired (1/3) replaced w/ other source
- 10% reduction in industrial output

EPA Analysis of Lieberman-Warner Climate Security Act of 2008

Impact on Feed Stock

"...[I]f efforts to expand nuclear power production and cost-effectively deploy carbon capture and storage for coal-fired generation are not successful ... [we] will drive generation to natural gas, which will dramatically increase its price tag. We don't have to look too far in the past to see the detrimental effect that high natural gas prices can have on the chemical industry, the fertilizer industry, and others to know that we must be conscious of this potential consequence."

John Dingell, Chairman U.S. House Committee on Energy & Commerce, March 5, 2008

Impact on the Economy

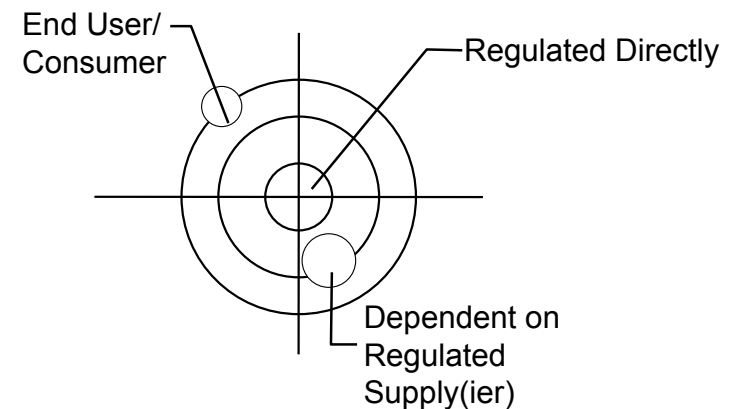
... EIA estimate indicated the emission targets would reduce the output of key energy-intensive manufacturing industries, such as food, paper, glass, cement, steel, and aluminum, by 10 percent and the output of non-energy intensive manufacturing industries by nine percent below currently projected levels in 2030.

Energy Market and Economic Impacts of S. 2191,
Figure 28 & 29

Issues for Lawyers

- Resources for initial permitting and compliance
- Resources/timeframes for permitting future expansion mods to plant
- Allocating contract risk for compliance of vendors, subs, outsourced ops
- Insurability of exposures

Zones of Impact



Bibliography

1. *Massachusetts v. EPA*, 549 U.S. 497 (2007)
2. *Regulating Greenhouse Gas Emissions under the Clean Air Act*, EPA ANPR, Federal Register: July 30, 2008 (Volume 73, Number 147), <http://www.epa.gov/fedrgstr/EPA-AIR/2008/July/Day-30/a16432a.pdf>
3. *The Clean Air Act*, Title 42 U.S. Code, Chapter 85, <http://www.access.gpo.gov/uscode/title42/chapter85.htm>
4. *2003 Commercial Buildings Energy Consumption Survey*, Table C23, EIA, <http://www.eia.doe.gov/emeu/cbecs/contents.html>
5. Statement of Hon. John Dingell, Chairman, U.S. House Committee on Energy & Commerce before the Edison Electrical Institute Chief Executive Officers Conference, March 5, 2008 http://energycommerce.house.gov/Press_110/110st137.shtml
6. *Energy & Market Impacts of S. 2191*, EIA [http://www.eia.doe.gov/oiaf/servicrpt/s2191/pdf/sroiaf\(2008\)01.pdf](http://www.eia.doe.gov/oiaf/servicrpt/s2191/pdf/sroiaf(2008)01.pdf)
7. EPA Analysis of Lieberman-Warner Climate Security Act of 2008 http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf