BEFORE THE UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

California Public Employees' Retirement System

California State Controller,
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California State Teachers' Retirement System

California State Treasurer,
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Environmental Defense

F&C Management

Florida Chief Financial Officer,
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Kentucky State Treasurer,
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PETITION FOR INTERPRETIVE GUIDANCE ON CLIMATE RISK DISCLOSURE

The fundamental principle underlying the Commission's disclosure requirements is that a public corporation must fully and fairly disclose all facts about its performance and operations that would be material to a reasonable shareholder's investment decision. Efficient markets depend on the availability of information on corporate strategy, performance, and policies to give investors the insights they need to make investment decisions.

Recent scientific, legal, and regulatory developments make it unavoidably clear that the risks and opportunities many corporations face in connection with climate change fall squarely within the category of material information that is required to be analyzed and disclosed in many corporate filings. Yet corporate disclosures of the risks and opportunities created by climate change lag behind these developments, and investors are left with little or in some cases no useful information about corporate exposure to these risks. Investors are responding to this information gap with increasing demand for more and better disclosure on climate risk that will allow them to make informed investment decisions.

This petition respectfully requests that the Commission issue an interpretive release clarifying that material climate-related information must be included in corporate disclosures under existing law. The petitioners include a broad coalition of state officials with regulatory, law enforcement, and fiscal management responsibilities; some of the nation's largest

institutional investors; asset management firms; organizations dedicated to fair and effective climate risk disclosure; and conservation organizations dedicated to climate stabilization with hundreds of thousands of members nationwide. A description of each petition signatory is included in Appendix A.

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Introduction: Climate Change Now Has Material Financial Consequences for Many Corporations.

The empirical evidence that human activities are changing the global climate in significant ways, and at an accelerating pace, is now overwhelming. The Fourth Assessment Report released earlier this year by the Intergovernmental Panel on Climate Change (IPCC) reviewed and synthesized the state of knowledge in climate change science. The IPCC concluded that evidence of the warming of the climate system is now "unequivocal" and that "numerous long-term changes in climate have been observed."[1] The IPCC's research also shows how climate change is affecting societies, economies and natural systems in the United States and throughout the world. The findings of the Fourth Assessment Report are described briefly below, and are further discussed in Appendix B to this petition.

A growing recognition that effective measures to reduce greenhouse gas emissions must happen very soon, if the most severe harms associated with climate change are to be averted, has prompted the adoption of comprehensive and mandatory programs to limit greenhouse gas emissions in many other countries. Such policies apply in large and populous regions and states in this country as well as in most of Europe. This enormous body of new law has important implications, even for companies not directly subject to regulation, because these initiatives govern sectors like electric power and transportation, on which entire economies depend. New legal obligations relating to greenhouse gas emissions are described in Part 3a, below, and in Appendices C (state regulation) and D (international regulation). In just the last few months, all three branches of the federal government have taken actions that emphasized the urgency of climate change and its newly central place in public policymaking. *See infra* Part 3.a (discussing federal administrative policies and *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007)); Appendix E (enumerating climate legislation pending in Congress).

In response to these developments, many business leaders now recognize the economic and financial risks associated with climate change, the enormous opportunities presented by the shift to a carbon-constrained economy, and the pressing need for a comprehensive national climate change policy. Appendix F compiles a small sampling of the many recent statements

[1] *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Summary for Policymakers*, *in* CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS 5, 7 (2007) [hereinafter IPCC, SPM-1], *available at* http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_SPM.pdf.

from corporate leaders on the importance of climate change as a market force and the inevitability and need for national greenhouse gas controls.

Climate change has far-reaching implications for business. The term "climate risk" includes effects on a company's performance and operations that range from physical damage to facilities, to new regulatory costs and incentives, to shifts in the market for products or services. The influence of climate change and greenhouse gas regulation on particular companies varies, but it is increasingly clear these developments have already had material effects on many companies' performance and operations, and that those impacts will increase as the climate continues to change. The days are long past when climate risk can be treated as a peripheral or hypothetical concern. Companies' financial condition increasingly depends upon their ability to avoid climate risk and to capitalize on new business opportunities by responding to the changing physical and regulatory environment.

Climate change has now become a significant factor bearing on companies' financial condition. For many companies, climate risk is material and subject to mandatory disclosure under traditional principles of the securities laws and the Commission's regulations. To date, however, disclosure of climate risk has been scant and inconsistent. In periodic reports filed pursuant to the Commission's disclosure regulations, many corporations have taken the position that any risks associated with climate change are too uncertain and remote in time to be material to their performance. The rapidly changing regulatory environment makes clear that this position is no longer sound. Moreover, companies whose assets are expected to last for decades must deal with changes—such as sea-level rise, increasingly severe weather, greater incidence of floods, fires, and droughts, and expanded ranges of disease and pest vectors—that will very likely continue to intensify. The growing body of data about the physical changes associated with climate change similarly shows that significant physical changes, and resulting risks, are no longer remote possibilities, but present realities that are only going to become more consequential.

Investors are looking for the companies best positioned to avoid the financial risks associated with climate change and to capitalize on the new opportunities that greenhouse gas regulation will provide. Interest in climate risk is not limited to investors with a specific moral or policy interest in climate change; it now covers an enormous range of investors whose interest is purely financial—from ordinary individuals whose appreciation for the business significance

of climate change has been quickened by recent scientific and legal developments, to large institutional investors looking for companies best positioned to respond to the very significant long-term financial hazards and opportunities. Investors of all types are aware that climate change, and greenhouse gas regulation, will have enormous implications for long-term capital investments that are being made right now by corporations. They want to know how fully (if at all) companies are taking climate change into account in making those decisions. They want to identify, and invest in, companies that are "out front" in responding to climate risks and opportunities, and to avoid firms that are behind the curve.

Investors' ability to evaluate climate risk and opportunity, however, depends upon access to the necessary information. To obtain the critical information on companies' ability to respond to the risks and opportunities of climate change, the investment community is increasingly demanding detailed disclosures about the risks companies face in connection with climate change. *See infra* Part 4.b. The market's judgment that climate risk has become a key indicator of corporate performance is further reflected in the briskly growing field of investment products and indices that attempt to capture data about climate risk. *See infra* Part 4.a.

Climate risk has simply become too important to corporate performance to be left out of mandatory disclosures under the securities laws and the Commission's rules. The expansive language of the Commission's existing regulations requires corporations to disclose to investors information that the reasonable investor would find significant to his or her assessment of the corporation's value. The magnitude of the regulatory consequences and physical changes associated with climate change for many companies brings climate risk within these requirements. In light of the current state of the scientific information on climate change, and the rapid growth of greenhouse gas regulation at all levels from international to municipal, both the physical and legal consequences of climate change have undoubtedly become "known trends" within the meaning of the Commission's regulatory standards. Particularly for small and individual investors who lack the resources to obtain restricted or for-hire products concerning firms' climate risks and opportunities, the necessary information will be obtained only through mandatory disclosures to the public at large under the Commission's rules.

We respectfully urge the Commission to clarify that corporations should assess their climate risk, analyze whether that risk is likely to have a material impact on them, and if so, disclose it to the public as required under the Commission's rules.

Specifically, we seek a statement from the Commission that companies must consider climate risk in their review of information that may be material and subject to disclosure. As the Commission has explained, registrants' judgments about what information is material and subject to disclosure obligations depend upon a careful review of all available information. The first step in providing adequate disclosure is ensuring that the company has the base of information necessary to make sound judgments about materiality. Companies' review of the significance of climate change for their operations and financial condition should include careful attention to the adequacy of their internal procedures for gathering and assessing climate-related information and of any corporate structures relating to climate risk, such as Board committees. Moreover, in order to assess whether they are subject to material risks associated with greenhouse gas regulation, companies will need to calculate their current and projected greenhouse gas emissions.

In addition to explaining that climate risk merits careful scrutiny in companies' assessment of their financial condition, the Commission should clarify that, under existing law, registrants must disclose any and all material information related to climate change. Depending on the particular corporation's circumstances, this obligation may require disclosure of information on:

- Physical risks associated with climate change that are material to the company's operations or financial condition;
- Financial risks and opportunities associated with present or probable greenhouse gas regulation; and
- Legal proceedings relating to climate change.

Part 6, below, and Appendix G set forth and discuss these elements in greater detail.

Because of the unevenness and inconsistency of current corporate disclosure of climate risks, investors will benefit from Commission guidance clarifying the application of existing law to the new business realities associated with climate change. However, considering the urgency of the need for improved disclosure, and because we are not proposing a change in substantive

legal standards, we also respectfully ask the Commission to take action now, while it develops such guidance. In a separate letter submitted today, we urge the Commission, through its Division of Corporation Finance, to devote close attention to the adequacy of disclosures concerning climate risk, particularly by registrants in industry sectors that emit high levels of greenhouse gases and those that are subject to regulation of greenhouse gas emissions. When it determines that registrants may not have disclosed material information on climate risk, the Commission should take action to ensure that they meet their obligations under the securities laws and regulations.

1. What Is Climate Change?

An overwhelming body of scientific evidence demonstrates that emissions of greenhouse gases, including carbon dioxide, are changing the world's climate with already extensive, and potentially catastrophic, effects. The scientific consensus on climate change was reiterated by the recent release of the IPCC's Fourth Assessment Report. This comprehensive survey, prepared by the international body charged with assessing the scientific, technical, and socio-economic information relevant to climate change, synthesized the massive body of scientific literature on climate change, its already observed and potential future impacts, and options for adaptation and mitigation. Appendix B contains a summary of the primary conclusions in the IPCC's 2007 Assessment, and a list of other widely respected information sources on various aspects of climate change. Petitioners are submitting to the Commission copies of the Fourth Assessment Report's three Summaries for Policymakers.

The IPCC's 2007 Assessment concludes that evidence of climate change "is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level."[2] These conclusions, which are consistent with those of the U.S National Academy of Sciences and many other scientific bodies, are that human-induced increases in greenhouse gases have already caused the Earth's atmosphere to warm, with very rapid warming occurring over the last three decades.[3]

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[2] *See id.* at 5.

[3] *See id; see also* Joint Science Academies' Statement: Global Response to Climate Change (June 2005), *available at* http://www.royalsoc.ac.uk/displaypagedoc.asp?id=20742; *see also* Naomi Oreskes, *The Scientific Consensus on Climate Change*, 306 SCIENCE 1686 (2004) (studying 928 scientific studies on

Climate change has already caused a wide range of impacts. As the IPCC confirmed, "numerous long-term changes in climate have been observed," including "changes in arctic temperatures and ice, widespread changes in precipitation amounts, ocean salinity, wind patterns and aspects of extreme weather including droughts, heavy precipitation, heat waves and the intensity of tropical cyclones."[4] Some of the observed evidence and impacts of climate change include:

- Eleven of the last twelve years (1995-2006) rank among the twelve warmest years on record;
- Mountain glaciers and snow cover have declined on average in both hemispheres, and widespread decreases in glaciers and ice caps have contributed to sea level rise;
- Losses from the ice sheets of Greenland and Antarctica have very likely contributed to recent sea level rise;
- The rate of observed global sea level rise has accelerated;
- More intense and longer droughts have been observed since the 1970s;
- Widespread changes in extreme temperatures have been observed over the last 50 years;
- There is observational evidence for an increase in intense tropical cyclone activity in the North Atlantic since 1970, correlated with increases in tropical sea surface temperatures.[5]

In the short term, further warming is predicted regardless of whether greenhouse gas emissions are reduced. But the *amount* of further warming later in the century is contingent upon future human actions which will, in part, determine how high concentrations of greenhouse gases climb. While even the amount of warming at the lower end of projections will have significant adverse impacts, the possibility of warming at the higher end would involve very grave risks for human health and safety, for the world economy, and for natural systems.[6]

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climate change and finding that none of them disagreed with consensus view that the Earth's climate is being affected by human activities).

[4] *See* IPCC, SPM-1, *supra* note 1, at 7.

[5] *See id*. at 5-9.

[6] Indeed, the distinctive threat posed by climate change was described in a recent report based upon a study by ten retired admirals and generals of the United States Armed Forces. That report concluded that "[p]rojected climate change poses a serious threat to America's national security," explaining that:

Warming like that expected under "business as usual" scenarios would fundamentally alter the global environment, with sweeping negative effects for human society.[7]

To avoid severe and potentially catastrophic warming later in the 21st Century, there is a growing consensus that it will be necessary to reduce emissions very soon.[8] Even with immediate action, stabilizing and then reducing atmospheric greenhouse concentrations will take decades.

The science of climate change is complex. But the fact that technically complex matters affect climate risk does not distinguish climate change from the many other scientific or technical subjects that can affect corporate value, or from the many known trends and uncertainties that Commission regulations require corporations to analyze and disclose. For corporations operating in fields such as biotechnology and pharmaceuticals, or any other high-tech field or area in which research and development is evolving, assessment of value frequently requires assessment of scientific information. It is not the Commission's responsibility or obligation to provide independent scientific assessment of risks that are beyond its technical expertise. But it is the Commission's responsibility to make sure corporations disclose material information that will allow investors to make their own assessments. Indeed, the Commission commonly requires disclosure of material risks in areas of technical complexity. Moreover, many of the most important ways in which climate change affects companies' financial condition are entirely traditional and familiar, such as by changing a company's costs of regulatory compliance, energy, or insurance.

The Commission's historic emphasis upon equal public access to material market information serves investors' interests and supports a robust economy. In the coming years, the

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> The predicted effects of climate change over the coming decades include extreme weather events, drought, flooding, sea level rise, retreating glaciers, habitat shifts, and the increasing spread of life-threatening diseases. These conditions have the potential to disrupt our way of life and to force changes in the way we keep ourselves safe and secure . . Unlike most conventional security threats that involve a single entity acting in specific ways and points of time, climate change has the potential to result in multiple chronic conditions, occurring globally within the same time frame.

CNA CORP., NATIONAL SECURITY AND THE THREAT OF CLIMATE CHANGE 6 (2007), *available at* http://securityandclimate.cna.org.

[7] *See, e.g.*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Summary for Policymakers*, *in* CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY 7 (2007) [hereinafter IPCC, SPM-2], *available at* http://www.ipcc-wg2.org/index.html; IPCC, SPM-1, *supra* note 1, at 13; CAL. CLIMATE CHANGE CTR., OUR CHANGING CLIMATE: ASSESSING THE RISKS TO CALIFORNIA 6-20 (2006), *available at* http://www.energy.ca.gov/2006publications/CEC-500-2006-077/CEC-500-2006-077.PDF.

[8] *See* IPCC, SPM-2, *supra* note 7, at 11, 22; CAL. CLIMATE CHANGE CTR., *supra* note 7, at 3-6.

economy will be called upon to deliver innovation to respond to climate change. No one yet knows exactly what combination of measures will prove necessary for society to avoid the hazardous effects of climate change, nor what new technologies will emerge as critical tools to produce energy with less climate impact. The enormous power of financial markets to deliver innovation will be critical to our ability to meet the challenge of climate change. Ensuring that corporations provide those markets with material climate information is vital, not only to providing investors the information they need, but also to society's ability to respond to climate change itself.

2. Current Law Requires Corporations to Disclose Material Information About Climate Risk.

The Commission's existing disclosure regulations speak in expansive and flexible terms that reflect the broad range of information investors consider when they assess corporate value. For many companies, climate risk clearly meets the standard of materiality established by the Commission and the courts, and falls directly within several of the specific disclosure requirements of Regulation S-K.

a. Climate Risk Is Material to Investors' Decisions.

The fundamental principle underlying the Commission's disclosure requirements is that a public corporation must fully and fairly disclose all facts about its performance and operations that would be material to a shareholder's investment decision. This disclosure obligation springs from the core requirement of the 1933 and 1934 Acts that investors receive financial and other significant information concerning securities offered for public sale. Under both Supreme Court and Commission precedent, the existence of significant investor demand for information helps to guide the determination of whether that information is material and hence required to be disclosed. "A fact is material if there is a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the 'total mix' of information made available."[9]

The Supreme Court has made clear that the determination of whether a fact is material is a holistic inquiry that cannot be reduced to a simple numeric formula. Determinations of

[9] SEC Staff Accounting Bulletin No. 99, 64 Fed. Reg. 45,150 (Aug. 12, 1999) (quoting TSC Industries v. Northway, Inc., 426 U.S. 438, 449 (1976)).

materiality require "delicate assessments of the inferences that a 'reasonable investor' would draw from a given set of facts, and the significance of those inferences to him . . . ."[10] In Staff Accounting Bulletin No. 99, Commission Staff reiterated this principle and rejected the practice of using a simple numeric threshold for determining whether an omission or misstatement in a financial statement is material.[11] Instead, Staff have made clear that the question of what information is material must take into account both quantitative and qualitative factors. This interpretation of materiality is also supported by the Financial Accounting Standards Board, which has stated that:

> [M]ateriality judgments can properly be made only by those who have all the facts. The Board's present position is that no general standards of materiality could be formulated to take into account all the considerations that enter into experienced human judgment.[12]

The steadily growing demand from investors for information about climate risk, described below in Part 4, demonstrates that "reasonable investors" exercising human judgment increasingly consider climate risk part of the total mix of information they assess to make investment decisions. Investors representing $41 trillion in assets participate in the Carbon Disclosure Project and its annual requests for climate risk information from corporations.[13] Members of the Investor Network on Climate Risk, which represents more than $4 trillion in assets, have repeatedly requested SEC action to clarify the need for climate risk disclosure.[14] Further, financial markets are actively addressing the demand for climate risk information in the products and services described below in Part 4. Corporate leaders themselves, as exemplified in Appendix F, have also recognized the critical importance of climate risks, in the form of both regulatory developments and physical risks, to the global economy.

The financial markets have judged that climate risk is important to investors' ability to assess corporate operations and performance. This judgment, along with the importance of climate risk for many registrants' financial prospects, compels the conclusion that material climate risk must be disclosed under the Commission's regulations.

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[10] *TSC Industries*, 426 U.S. at 450.
[11] *See* SEC Staff Accounting Bulletin No. 99, *supra* note 9.
[12] FINANCIAL ACCOUNTING STANDARDS BOARD, STATEMENT OF FINANCIAL ACCOUNTING CONCEPTS NO. 2: QUALITATIVE CHARACTERISTICS OF ACCOUNTING INFORMATION 45 (1980), *available at* http://www.fasb.org/st/.
[13] *See* Carbon Disclosure Project: About Us, http://www.cdproject.net/aboutus.asp.
[14] *See, e.g.*, Letter from Bradley Abelow et al. to Chairman Cox (June 14, 2006).

b. FAS 5 and Regulation S-K Require Registrants to Disclose Climate Risk.

Because climate change affects different corporations in different ways, there are several portions of a registrant's periodic reports in which it may be appropriate for a corporation to disclose climate risk.

FAS 5

Statement of Financial Accounting Standards No. 5, *Accounting for Contingencies* (FAS 5), sets the standard for disclosure of material contingent liabilities that can be expressed on the balance sheet. FAS 5 requires a company to accrue a charge against current income for the entire amount of a material liability that is probable and reasonably estimable. It allows a contingent liability to be expressed as a range of estimable liabilities. If a material contingent liability is "reasonably possible" but cannot be estimated, FAS 5 requires that liability to be disclosed in the footnotes to the financial statements.

Examples of companies that have likely crossed the FAS 5 threshold for accruing actual dollar values for climate related contingent liabilities include companies that emit significant levels of greenhouse gases and are already subject to direct regulation of those emissions here or abroad, companies considering major capital investments that are affected by new and evolving regulatory treatment of greenhouse gas emissions, and companies whose physical operations are at hazard due to developments such as melting permafrost or storm damage. FAS 5 requires those companies to disclose material climate risks that can be reasonably estimated on their balance sheets now.

Regulation S-K

For many other companies, analysis of climate risks may not yet have reached the level of sophistication or certainty that would allow or require disclosure of climate risk as a specific amount or even a range of amounts on the balance sheet. For these companies, as well as for those who have crossed the FAS 5 threshold, the narrative disclosure provisions of Regulation S-K require that they disclose and discuss their material climate risks. Three specific provisions of Regulation S-K require narrative disclosures of climate risks:

Item 101: Description of Business

Item 101 requires a description of the "general development of business,"[15] including plan of operation, "any anticipated material acquisition of plant and equipment and the capacity

[15] 17 C.F.R. § 229.101(a) (2007).

thereof,"[16] and "other material areas which may be peculiar to the registrant's business."[17] Item 101(c) requires disclosure of "competitive condition in the business."[18] As described in Part 3, below, both regulatory developments relating to greenhouse gas emissions and the physical risks of climate change pose immediate challenges to the general development of many businesses. Some of these challenges include changes to the cost of energy and transportation, changes to and uncertainty about the cost of capital investments, and contingency planning for climate change-influenced events such as extreme weather or changes in water supply.

Item 101(c)(1)(xii) specifically requires disclosure of the cost of complying with environmental laws:

> Appropriate disclosure also shall be made as to the material effects that compliance with Federal, State and local provisions which have been enacted or adopted regulating the discharge of materials into the environment, or otherwise relating to the protection of the environment, may have upon the capital expenditures, earnings and competitive position of the registrant and its subsidiaries. The registrant shall disclose any material estimated capital expenditures for environmental control facilities for the remainder of its current fiscal year and its succeeding fiscal year and for such further periods as the registrant may deem material.

For those companies operating in any of the United States or overseas jurisdictions that have enacted or adopted greenhouse gas emissions limits, the effects of those limits on capital expenditures, earnings and competitive position must be disclosed whenever they are material.

Item 103: Legal Proceedings

Climate change has already generated significant litigation, including suits against private companies that are major emitters of greenhouse gases.[19] Such climate litigation may trigger disclosure requirements under Item 103 of Regulation S-K, which provides in part:

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[16] 17 C.F.R. § 229.101(a)(2)(B)(*3*) (2007).
[17] 17 C.F.R. § 229.101(a)(1)(B)(*5*) (2007).
[18] 17 C.F.R. § 229.101(c)(1)(x) (2007).
[19] *See, e.g.*, JUSTIN R. PIDOT, GLOBAL WARMING IN THE COURTS: AN OVERVIEW OF CURRENT LITIGATION AND COMMON LEGAL ISSUES (2006) (summarizing litigation in U.S. courts on climate issues), *available at* http://www.law.georgetown.edu/gelpi/current_research/documents/GWL_Report.pdf. In July 2004, New York, seven other states, and the City of New York filed a lawsuit grounded in the common law of public nuisance against the five power companies that were, at the time, the nation's largest emitters of carbon dioxide. Although these claims were initially dismissed in the lower court, the states continue to pursue

> 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.[20]

In 1993, the Office of the Chief Accountant addressed the disclosure of environmental litigation liabilities in Staff Accounting Bulletin 92.[21] In an effort to "elicit more meaningful information concerning environmental matters in filings," SAB 92 made clear that a company must accrue a charge for environmental liabilities if it is probable that the liability has been incurred, and if it can be reasonably estimated. Recognizing the "significant uncertainties" inherent in determining many environmental liabilities before they are reduced to judgment, Commission Staff nonetheless directed that corporations disclose the reasonably probable results of legal proceedings, which in some cases would be a range of values supported by a narrative discussion of the uncertainties.

Item 303: Management's Discussion and Analysis of Financial Condition and Results of Operations

Item 303 of Regulation S-K requires the preparation and disclosure of the Management's Discussion and Analysis of Financial Conditions and Results of Operations (MD&A). The importance of MD&A as a vehicle for disclosing the critical subjects facing corporate management is reflected by the frequency with which the Commission has addressed and clarified this requirement in studies, rulemakings, and releases. Commission Staff has summarized the MD&A requirement as follows:

> Item 303 of Regulation S-K requires a company to discuss its financial condition, changes in financial condition and results of operations. A company must include in this section a discussion of its liquidity, capital resources and results of operations. In particular, forward looking information is required where there are known trends, uncertainties or other factors enumerated in the rules that will result in, or that are reasonably likely to result in, a material impact on the company's liquidity, capital resources, revenues and results of operations, including income from continuing operations. A company must focus on known material events and uncertainties that would cause reported

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the litigation on appeal. *See* Connecticut v. Am. Elec. Power Co., 406 F. Supp. 2d 265 (S.D.N.Y. 2005), *appeal docketed*, No. 05-5104 (2d Cir. Sept. 22, 2005).

[20] 17 C.F.R. § 229.103 (2007). Item 103 also requires disclosure of proceedings that are "known to be contemplated by government entities." *Id.* (Instruction No. 5).

[21] SEC Staff Accounting Bulletin No. 92, 56 Fed. Reg. 33,376 (June 14, 1993).

> financial information not to be necessarily indicative of future operating results or of future financial condition.[22]

The Commission's December 2003 interpretive guidance makes clear that the discussion of the future challenges facing corporate management is central to MD&A: "A good introduction or overview would . . . provide insight into material opportunities, challenges and risks, such as those presented by known material trends and uncertainties, on which the company's executives are most focused for both the short and long term, as well as the actions they are taking to address these opportunities, challenges and risks." [23] As described in Part 4 below, information about the scope of the challenges climate change poses to a specific company, and whether its management is adequately prepared to face those challenges, is precisely the type of information that the market is now demanding about climate risk.

The requirement for companies to address "known trends and uncertainties" in their MD&A is particularly applicable to climate risk. Item 303 requires that publicly traded companies disclose:

> [A]ny 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.[24]

The Division of Corporation Finance Staff has described this obligation as follows:

> The requirement to discuss uncertainties in MD&A encompasses both financial and non-financial factors that may influence the business, either directly or indirectly. In many cases, there will be current or immediate accounting implications associated with an uncertainty, as occurs when the likelihood of a loss contingency becomes probable and the amount of loss is reasonably estimable. However, the need to discuss such matters in MD&A will often precede any accounting recognition when the registrant becomes aware of information that creates a reasonable likelihood of a material effect on its financial condition or results of operations, or when such information is

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[22] U.S. SEC. & EXCH. COMM'N, DIV. OF CORP. FIN., SIGNIFICANT ISSUES ADDRESSED IN THE REVIEW OF THE PERIODIC REPORTS OF THE FORTUNE 500 COMPANIES (Feb. 23, 2003), *available at* www.sec.gov/divisions/corpfin/fortune500rep.htm.

[23] Interpretation: Commission Guidance Regarding Management's Discussion and Analysis of Financial Condition and Results of Operations, Securities Act Release No. 8350, Exchange Act Release No. 48,960, 68 Fed. Reg. 75,056 (Dec. 29, 2003).

[24] 17 C.F.R. § 229.303(a)(3)(ii) (2007).

> otherwise subject to disclosure in the financial statements, as occurs when the effect of a material loss contingency becomes reasonably possible. If a registrant is unable to estimate the reasonably likely impact, but a range of amounts are determinable based on the facts and circumstances surrounding the contingency, it should disclose those amounts.[25]

Item 303 specifically deals with the disclosure obligation when a known trend has an uncertain impact on a corporation. The mere fact of uncertainty is not an excuse against disclosure. Item 303 sets forth disclosure requirements for those situations in which a registrant's reported past and present financial records do not accurately indicate its long-term viability and profitability because of a known trend or change in the business environment. "Item 303(a)(3)(ii) essentially says to a registrant: If there has been an important change in your company's business or environment that significantly or materially decreases the predictive value of your reported results, explain this change in the prospectus."[26] When a company encounters "'matters that would have an impact on future operations and have not had an impact in the past'" and "'matters that have had an impact on reported operations and are not expected to have an impact on future operations,'"[27] Item 303 requires disclosure. Determinations of whether a future event requires disclosure are judged according to a negligence standard of objective reasonableness; the assessment is whether the "'known trend, demand, commitment, event or uncertainty [is] likely to come to fruition.'"[28]

Item 303 does not require unlimited speculation about future possibilities or "forward looking information."[29] Rather, "known trends and uncertainties" are "understood as referring to those trends discernable from hard information alone."[30] The critical distinction between optional disclosure of "forward looking" analysis and required disclosure of "the future impact of presently known trends" is based on "the nature of the prediction required."[31] If the future

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[25] U.S. SEC. & EXCH. COMM'N, DIV. OF CORP. FIN., CURRENT ACCOUNTING AND DISCLOSURE ISSUES IN THE DIVISION OF CORPORATION FINANCE (Nov. 30, 2006), *available at* http://www.sec.gov/divisions/corpfin/cfacctdisclosureissues.pdf.
[26] Oxford Asset Management, Ltd. v. Jarvis, 297 F.3d 1182, 1192 (11th Cir. 2002).
[27] *Id.*
[28] *Id*.
[29] 17 C.F.R. § 229.303(a) (2007) (Instruction No. 7).
[30] Glassman v. Computervision Corp., 90 F.3d 617, 631 (1st Cir. 1996).
[31] Concept Release on Management's Discussion and Analysis of Financial Condition and Results of Operations, Securities Act Release No. 6711, 52 Fed. Reg. 13,715, 13,717 (Apr. 24, 1987); *see also id.* ("Required disclosure is based on currently known trends, events, and uncertainties that are reasonably expected to have material effects, such as: A reduction in the registrant's product prices; erosion in the

event is "based on *currently known trends, events, and uncertainties that are reasonably expected to have material effects*,"[32] then disclosure is required.

Further, Item 303 requires disclosure when a known trend reflects "persistent conditions of the particular registrant's business environment."[33] Thus, businesses are not obligated to disclose trends that they reasonably believe will have only a short-term impact on the market, but are obligated to report any changes that will have a long-term impact on their business environment.[34] Thus the fact that climate change carries significant to severe long-term risks for many companies places it squarely within Item 303's disclosure requirements.

For corporations operating in the many jurisdictions in which greenhouse gas-related emission limitations or regulations are now in effect, disclosure of the material effects of those programs on capital expenditures, earnings and competitive position is now required under both Item 101 and Item 303. The trend toward increased greenhouse gas regulation, and the associated uncertainty about the impact of this regulation, must be analyzed to determine if they are material and subject to disclosure under Item 303.

c. Interpretive Guidance Is Needed to Clarify the Application of These Disclosure Requirements to Corporate Climate Risk.

Notwithstanding the plain terms of Regulation S-K, corporate practice on climate risk disclosure is lagging behind the rapidly evolving economic, legal, and scientific developments related to climate change. The low rate of meaningful climate risk disclosure and the inconsistency in how companies are addressing this subject in their filings are denying investors the information they need and demand about climate risk. The Commission's mission "to protect investors; maintain fair, orderly, and efficient markets; and facilitate capital formation"[35]

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registrant's market share; changes in insurance coverage; or the likely non-renewal of a material contract. In contrast, optional forward-looking disclosure involves anticipating a future trend or event or anticipating a less predictable impact of a known event, trend or uncertainty.").

[32] *Id.* (emphasis in original); s*ee also* Management's Discussion and Analysis of Financial Condition and Results of Operations; Certain Investment Company Disclosures, Securities Release No. 6835, Exchange Act Release No. 26,831, Investment Company Act Release No. 16,961, 54 Fed. Reg. 22,427, 22,428-29 (May 24, 1989).

[33] Oxford Asset Management, Ltd. v. Jarvis, 297 F.3d 1182, 1191 (11th Cir. 2002).

[34] *See* Kapps v. Torch Offshore, 379 F.3d 207, 218 (5th Cir. 2004) (holding that Torch Offshore was not obligated to disclose a 60% drop in the price of natural gas over a 5 ½ month period, because "at the time of the IPO, it was not unreasonable to consider the decline in natural gas prices as not yet constituting a trend").

[35] U.S. SEC. & EXCH. COMM'N, 2005 PERFORMANCE AND ACCOUNTABILITY REPORT (2005), *available at* http://www.sec.gov/about/secpar/secpar2005.pdf.

requires clarification of the application of existing disclosure standards to the critical issue of climate risk.

The remainder of this petition describes those risks in Part 3, the growing demand from investors for information about corporations' exposure to those risks in Part 4, and the current inconsistent and inadequate state of climate risk disclosure in Part 5. Part 6 sets forth the action we request from the Commission to clarify the application of existing law to the disclosure of climate risks.

3. What Are the Climate-Related Risks to Publicly Traded Corporations?

The far-reaching nature of the climate changes that are underway makes global warming and greenhouse gas regulations important considerations for corporations throughout the economy. For investors, these developments make climate risk a key area of interest concerning corporate performance. In a recent McKinsey survey of over 4,000 international executives, climate change was the third most commonly cited risk to shareholder value in the near term.[36] As explained in a recent report by Marsh, the world's largest insurance broker:

> Climate risk cuts across almost every industry in every corner of the world—energy producers and consumers; transportation providers and those reliant on it; forestry, agriculture, and food producers; construction; chemicals, pharmaceuticals, and the life sciences; real estate; communications and technology; tourism and hospitality; the retail industry, and more. The number of companies publicly addressing the risks and opportunities posed by climate change has increased dramatically over the past several years.[37]

A recent statement joined by 153 companies that are part of the U.N. Global Compact—including DuPont and Pfizer—declared that "[c]limate change poses both risks and opportunities to all parts of the business sector, everywhere."[38] Similarly, as explained in the disclosure framework adopted by the Investor Network on Climate Risk:

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[36] McKinsey & Co., *The McKinsey Global Survey of Business Executives: Business and Society*, 2 MCKINSEY Q. 33 (2006).

[37] Tom Walsh, Marsh, *Climate Change: Business Risks and Solutions,* RISK ALERT, Apr. 2006, at 1; *see also* Jonathan Lash & Fred Wellington, *Competitive Advantage on a Warming Planet*, HARV. BUS. REV., Mar. 2007, at 95, 96 (quoting Wal-Mart CEO Lee Scott regarding his company's reasons for addressing the issue); CERES, GLOBAL FRAMEWORK FOR CLIMATE RISK DISCLOSURE 4 (Oct. 2006), *available at* http://www.ceres.org/pub/docs/Framework.pdf.

[38] *See* Statement of the Business Leaders of the U.N. Global Compact, Caring for Climate: The Business Leadership Platform (2007) (including list of signatories), *available at* http://www.unglobalcompact.org/Issues/Environment/Climate_Change/index.html.

> Given the sweeping global nature of climate change, climate risk and opportunity is embedded in the operations of all companies. Some companies with significant emissions of greenhouse gases or energy use face current or future regulatory risks, while climate change may pose a range of physical or financial risks to other firms . . . In some cases, the risks to companies may be indirect. For example, even if a company is not directly subject to regulations, significant emissions in its value chain may still result in increased costs (upstream) or reduced sales (downstream). Climate change also represents significant opportunities for many firms. Some companies will develop profitable new technologies or markets as governments pursue innovative strategies to address climate change and spur technology development.[39]

Climate change can pose challenges to businesses in numerous ways, but the most significant risks and opportunities tend to flow from two broad developments: (1) the changing regulatory environment for greenhouse gas emissions, and (2) the changing physical environment associated with global warming.

a. The Changed Regulatory Environment for Greenhouse Gas Emissions.

A growing appreciation of the serious consequences likely to occur if warming continues has created an urgency to reduce emissions as soon as possible. Governments at all levels are now undertaking policies to limit greenhouse gas emissions. Individual countries and multi-state coalitions around the globe have enacted binding greenhouse gas regulations (see Appendix D). In 2005, the Kyoto Protocol to the U.N. Framework Convention on Climate Change entered into force, committing the vast majority of industrial nations to reduce their greenhouse gas emissions.[40] Although the U.S. and Australia have not ratified the Kyoto Protocol, registrants with the Commission face regulation of their greenhouse gas emissions under the Protocol due to their operations in Europe and other industrialized nations. Almost half of aggregate sales by the Standard & Poor's 500 corporations were overseas in 2006, with much of those sales in countries that have also enacted laws and regulations limiting greenhouse gas emissions.[41] The European

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[39] CERES, GLOBAL FRAMEWORK FOR CLIMATE RISK DISCLOSURE, *supra* note 37, at 4; *see also* Lash & Wellington, *supra* note 37, at 96 (noting "far-reaching effects of climate change on business" and that financial significance is not limited to "utilities and energy-intensive industries," but extends to "most industries").

[40] *See* U.N. Framework Convention on Climate Change (UNFCCC), Essential Background, http://unfccc.int/essential_background/items/2877.php. As of June 6, 2007, 174 countries and one regional economic integration organization (the EU) had ratified or accepted the Kyoto Protocol. The United States and Australia have not ratified the Protocol.

[41] *See* Press Release, Standard & Poor's, Foreign Sales by U.S. Companies on the Rise, Says S&P (July 9, 2007), *available at* http://www2.standardandpoors.com/spf/pdf/index/070907_SP500FOREIGN.pdf;

Union has established a cap and trade regime for greenhouse gas emissions, linked to the Kyoto Protocol, known as the European Union Greenhouse Gas Emissions Trading Scheme (EU-ETS).[42] The EU-ETS was launched in early 2005, and created an EU-wide market for trading in greenhouse gas emissions. Due to initiatives like the EU-ETS, the global greenhouse gas emissions trading market increased from involving negligible sums in 2003 to being valued at approximately 18 billion Euros (almost $25 billion at current exchange rates) in 2006.[43] Negotiations are underway to develop the next level of limits under the Kyoto agreement, which will go into effect after the first round of limits expires in 2012. The G-8 group of major industrial nations—including the United States and China—recently agreed in principle to a commitment to reduce greenhouse gas emissions by fifty percent by the year 2050.[44]

The United States has yet to adopt a federal program to control greenhouse gas emissions. However, in the absence of federal legislation, state and local regulation of greenhouse gas emissions has already become a significant force in the United States economy. Appendix C summarizes regional initiatives among states, mandatory state regulations on greenhouse gas emissions and emissions reporting requirements, state emissions goals and emissions reduction incentives, and other state actions regarding greenhouse gas emissions. Many of these programs are already in effect, and are affecting corporate performance by changing financial conditions and liabilities and creating new opportunities and markets for both alternative energy and carbon emission credits.[45]

Multi-state regional initiatives to reduce greenhouse gas emissions now apply in territory representing over 58% of the U.S. GDP[46] and 54% of the nation's population.[47] Renewable

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Michael Tsang & Daniel Hauck, *Bulls See Wall Street Gains This Year as Key U.S. Firms Benefit from Growth Overseas*, INT'L HERALD TRIB. (Paris), May 7, 2007 (citing S&P's finding that S&P 500 firms' sales made 49 percent of their sales outside the United States, up from 30 percent in 2001).

[42] *See* European Commission, Emission Trading Scheme (EU ETS), http://ec.europa.eu/environment/climat/emission.htm.

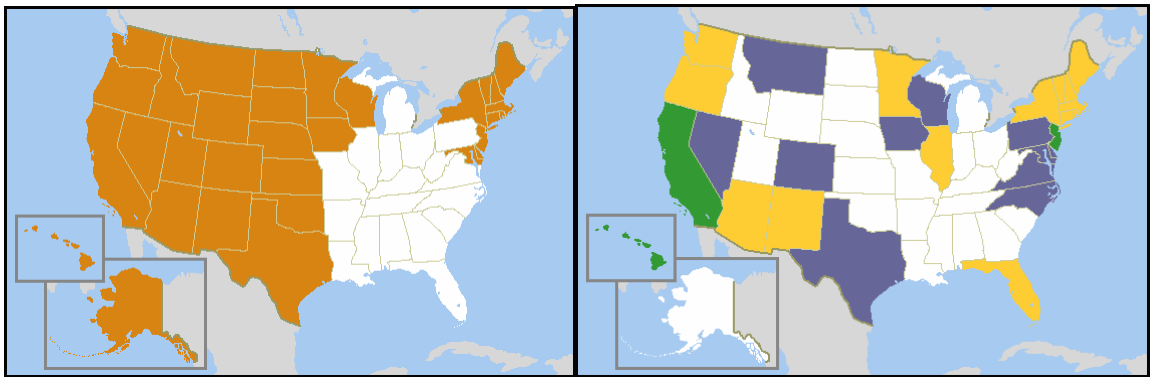
[43] GLOBAL REPORTING INITIATIVE & KPMG GLOBAL SUSTAINABILITY SERVS., REPORTING THE BUSINESS IMPLICATIONS OF CLIMATE CHANGE IN SUSTAINABILITY REPORTS 8 (2007) [hereinafter GRI/KPMG STUDY].

[44] *See* Mark Landler & Judy Dempsey, *U.S. Compromise on Global Warming Plan Averts Impasse at Group of 8 Meeting*, N.Y. TIMES, June 7, 2007, at A10.

[45] GRI/KPMG STUDY, *supra* note 43, at 5 (in study of sustainability reports for 2005 submitted by major companies drawn from FT 500, "a surprising two thirds of companies reported new business opportunities from climate change").

[46] *See* News Release, Bureau of Economic Analysis, Gross Domestic Product (GDP) by State, 2006 (June 7, 2007), *available at* http://www.bea.gov/newsreleases/regional/gdp_state/gsp_newsrelease.htm.

portfolio standards (RPSs) that require a certain portion of electricity needs to be met by renewable energy sources have been adopted in 25 states which collectively represent over 65% of the nation's GDP and more than 60% of its population. Several states have further adopted greenhouse gas emissions reduction goals, and three—California, Hawaii and New Jersey—have set mandatory, economy-wide caps on greenhouse gas emissions. These three states together account for 17% of the U.S. GDP and 16% of the country's population. The geographic reach of these state actions to control greenhouse gas emissions indicates that they have significant economic and competitive consequences already.



Left: State participation in regional initiatives involving greenhouse gas emissions caps or standards, or development and coordination of policies to deploy cleaner lower carbon energy resources.
Right: Blue, green and yellow states collectively indicate those having adopted an RPS; yellow states have further set GHG emissions reduction goals, while green states have established mandatory caps on statewide GHG emissions.

Many states have joined together in regional agreements to reduce greenhouse gas emissions. New York has joined with nine other northeastern states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, Rhode Island, and Vermont) to form the Regional Greenhouse Gas Initiative (RGGI), which is a mandatory cap-and-trade program to reduce carbon dioxide emissions from power plants. Under the program, emissions will be capped starting in 2009 at then-current levels, and then reduced by 10 percent below 2009 levels by 2019. RGGI member states are now in the process of enacting implementing legislation or regulations.[48] In 2007, the Governors of Arizona, California, New Mexico,

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[47] *See* U.S. CENSUS BUREAU, U.S. CENSUS 2000 tbl.2 (2000), *available at* http://www.census.gov/population/www/cen2000/respop.html.
[48] REGIONAL GREENHOUSE GAS INITIATIVE, FREQUENTLY ASKED QUESTIONS (Dec. 20, 2005), *available at* http://www.rggi.org/agreement.htm.

Oregon, Utah, and Washington, as well as several Canadian provinces and Indian tribes, entered into the Western Climate Initiative to establish a regional greenhouse gas reduction goal and develop market-based strategies to achieve emissions reductions.[49] In 2007, 34 states—representing over 70% of the population of the United States—joined the Climate Registry, a central repository of greenhouse gas emissions data gathered by states under mandatory and voluntary reporting programs.[50]

California also has enacted a suite of ambitious measures to limit greenhouse gas emissions that are setting the standard for further state action:

- The Global Warming Solutions Act (Assembly Bill 32) (2006) establishes a mandatory greenhouse gas emissions cap for the State, based on 1990 emissions, mandates the promulgation of regulations, by 2011, to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gases, and requires reporting of greenhouse gas emissions by 2008.[51]

- Assembly Bill 1493 limits greenhouse gas emissions from new motor vehicles. Fourteen other states "have adopted or announced their intention to adopt California's greenhouse gas emission controls" and, "[i]ncluding California, these states account for 44% of the total U.S. population."[52]

- Greenhouse gas procurement standards for electricity providers entering long-term power procurement contracts mandate a performance level of no greater than 1,100 pounds of carbon dioxide per megawatt-hour.[53] This standard affects long-term contracts made with any electricity provider serving the California electricity market, whether in-state or

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[49] *See* Western Climate Initiative (Feb. 26, 2007), *available at* http://www.governor.wa.gov/news/2007-02-26_WesternClimateAgreementFinal.pdf; Office of Energy Efficiency and Renewable Energy, U.S.Dep't of Energy, Utah Joins Western Climate Initiative (May 22, 2007), http://www.eere.energy.gov/states/news_detail.cfm/news_id=10987.

[50] *See* The Climate Registry, http://www.theclimateregistry.org.

[51] *See* California Air Resource Board, AB 32 Fact Sheet – California Global Warming Solutions Act of 2006 (Sept. 25, 2006), *available at* http://www.arb.ca.gov/cc/factsheets/ab32factsheet.pdf.

[52] *See* CONG. RESEARCH SERV., CALIFORNIA'S WAIVER REQUEST TO CONTROL GREENHOUSE GASES UNDER THE CLEAN AIR ACT 6 (Aug. 20, 2007). California's request for a waiver pursuant to Section 209 of the Clean Air Act is pending before the EPA. *See id*. at 15 (noting that California has a "strong case" for a waiver). Auto manufacturers and dealers have filed lawsuits challenging the state greenhouse gas emissions standards for automobiles adopted by California and other states. *See* Central Valley Chrysler-Jeep v. Witherspoon, No. CV-04-6663 (E.D. Cal. filed Dec. 7, 2004); Lincoln Dodge, Inc. v. Sullivan, No. 1:06-CV-0070 (D.R.I. filed Feb. 13, 2006). In one of those cases, on September 12, 2007, the United States District Court for the District of Vermont rejected all of the manufacturers' and dealers' challenges to the state greenhouse gas emissions standards. Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie, No. 2:05-CV-302 (D.Vt. Sept. 12, 2007).

[53] *See* Press Release, Cal. Pub. Utilities Comm'n, PUC Sets GHG Emissions Performance Standard to Help Mitigate Climate Change (Jan. 25, 2007), *available at* www.cpuc.ca.gov; S.B. 1368 (Cal.) (signed into law on Sept. 29, 2006).

out-of-state. Washington and Montana also recently adopted requirements for electricity generation units to meet greenhouse gas emissions limitations.[54]

- Executive Order S-01-07 directs the California Air Resources Board to promulgate regulations to require the state's petroleum refiners and gasoline sellers to cut by 10 percent the emissions of greenhouse gases associated with the production and use of their products.[55]

Over 500 of the nation's Mayors, representing cities containing over 65 million Americans, have signed the U.S. Mayors' Climate Protection Agreement, under which they commit to greenhouse gas emission reductions that meet or exceed Kyoto agreement targets of seven percent below 1990 levels by 2012.[56] State and local governments have enacted hundreds of other measures to reduce emissions of greenhouse gases, and scores of further proposals are under consideration throughout the country (see Appendix C).

The various programs passed by state and local governments are already exerting their force in the economy and in many cases having material impact on corporate performance. In addition to these measures, federal action to reduce greenhouse gas emissions is widely considered to be inevitable. The Supreme Court's 2007 decision in *Massachusetts v. EPA* broadly confirmed EPA's authority to take regulatory action addressing global warming pollution under the existing terms of the Clean Air Act. In May, President Bush directed EPA and other federal agencies "to take the first steps toward regulations that would cut gasoline consumption and greenhouse gas emissions from motor vehicles" and to complete the regulatory process by the end of 2008.[57]

In addition, Congress is actively considering bills that would establish national systems of greenhouse gas regulation. Appendix E summarizes pending federal legislation relating to

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[54] *See* S.B. 6001, 2007 Leg. (Wash. 2007); *see also* H.B. 25, 2007 Leg. (Mont. 2007) (codified in scattered sections); *see also* Pew Ctr. on Global Climate Change, What's Being Done: States Latest News, http://www.pewclimate.org/what_s_being_done/in_the_states/news.cfm.

[55] *See* Exec. Order No. S-01-07 (Cal. Jan. 18, 2007) (establishing Low Carbon Fuel Standards); *see also* A.B. 1007 (Cal.) (instituting state alternative fuels plan).

[56] *See* Office of the Mayor, Seattle, U.S. Mayors Climate Protection Agreement, http://www.seattle.gov/mayor/climate/; Anthony Faiola & Robin Shulman, *Cities Take Lead on Environment as Debate Drags at Federal Level: 522 Mayors Have Agreed to Meet Kyoto Standards*, WASH. POST, June 9, 2007, at A1.

[57] *See* Press Release, The White House, Rose Garden Statement: President Bush Discusses CAFE and Alternative Fuel Standards (May 14, 2007), http://www.whitehouse.gov/news/releases/2007/05/20070514-4.html.

climate change and greenhouse gas emissions.[58] Although debate continues about the precise mix of measures that should be adopted, enactment of a broad national program of mandatory controls on greenhouse gas emissions appears highly likely in the near term.[59]

According to the public statements of many business leaders, much of the corporate community has already largely incorporated the inevitability of federal greenhouse gas controls into plans for the future. Indeed, one of the most significant developments over the past five years has been a dramatic shift in the business community toward the recognition that climate change is a real and imminent problem for our economic security, and the increasing advocacy for an effective policy response. Appendix F contains a collection of statements that indicate the degree to which corporate leaders now view climate change as a critical market force, and greenhouse gas controls as both inevitable and necessary.

A long and growing list of corporate leaders has joined the call for mandatory federal limits on greenhouse gas emissions. More than thirty prominent corporations have joined with a coalition of environmental groups to form the United States Climate Action Partnership (USCAP), a group that calls for a strong national policy to reduce U.S. greenhouse gas emissions, including an economy-wide, mandatory cap and trade program limiting greenhouse gas emissions as part of an overall package of policies designed to limit "global atmospheric [greenhouse gas concentrations] to a level that minimizes large-scale adverse climate change impacts to human populations and the natural environment . . . "[60] USCAP members include Alcoa, Chrysler Group, ConocoPhillips, Duke Energy, DuPont, Ford Motor Company, General

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[58] In addition to those bills already introduced for legislative consideration, Senators Joseph Lieberman and John Warner, both members of the Senate Environment and Public Works Committee, recently released a detailed proposal for a climate bill they will introduce later this Fall. This bipartisan effort will call for an economy-wide reduction in greenhouse gas emissions, to be achieved through the implementation of a cap and trade program coupled with various carbon market monitoring provisions. *See* Press Release, Office of Senator Joe Lieberman, Lieberman and Warner Unveil Bipartisan Climate Proposal (Aug. 2, 2007); The Lieberman-Warner America's Climate Security Act of 2007: An Annotated Table of Contents, *available at* http://lieberman.senate.gov/documents/acsa.pdf.

[59] Two Senate climate change bills, the Sanders-Boxer and Kerry-Snowe bills, would require the Commission to improve corporate disclosure of climate risk in securities filings. *See* S. 309, 110th Cong. § 9 (2007); S. 485, 110th Cong. § 302 (2007). The corporate disclosure provisions in these bills would require the SEC to (1) issue an interim interpretive release clarifying that climate change constitutes a known trend, and (2) within two years, direct public companies to inform investors of risks relating to their financial exposure due to their greenhouse gas emissions, and the potential economic impacts of global warming on the interests of each company.

[60] *See* U.S. CLIMATE ACTION P'SHIP, A CALL FOR ACTION 6 (2007), *available at* http://www.us-cap.org/USCAPCallForAction.pdf.

Electric, General Motors, PepsiCo, PG&E Corporation, Rio Tinto, and Shell, among many other prominent corporations.

The growing list of regulatory controls on greenhouse gas emissions at the local, state, regional and international levels constitutes a "known trend" whose affects should be analyzed and, if material, disclosed under Regulation S-K. Corporate participation in advocacy for federal climate change policy demonstrates the likelihood of federal greenhouse gas laws is "known" as well, and that the uncertainty about the scope and form of federal climate laws is a known uncertainty that has important implications for corporate financial prospects. In spite of this, analysis of and disclosure of the impact of greenhouse gas regulation on corporate performance remains inconsistent, and sometimes nonexistent, to the distinct detriment of investors and the market as a whole.

b. The Changing Physical Environment.

The alterations to the physical environment observed and expected from climate change already have implications for the operations and financial condition of many companies, and these physical changes will likely affect more companies as the climate continues to change. The physical changes described in Part 1 above and in Appendix B include both the obvious—changing temperatures, rising sea levels, more severe storms—and the more subtle, such as changes in the amount of local precipitation and accelerated snowmelt that will affect water supply, as well as warmer temperatures that may expand the ranges of disease vectors and pests that affect human health and food and fiber production.[61] All of these changes will have economic impacts on businesses, including the continued use of corporate facilities in vulnerable locations and the viability of the other businesses in their supply chain.[62]

Many of the potential impacts from physical risks resulting from climate change are known or predictable, and should be disclosed if material. The overwhelming consensus in the scientific literature establishes that the physical shifts brought by climate change are known

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[61] *See*, *e.g.*, Matthew D. Zinn, *Adapting to Climate Change: Environmental Law in a Warmer World*, 34 ECOLOGY L.Q. 61, 68 (2007) (stating that "[i]t is hard to overstate the significance of climate change's implications for western water supply," and discussing studies).

[62] *See* CARBON DISCLOSURE PROJECT, CALVERT & CERES, CLIMATE RISK DISCLOSURE BY THE S&P 500 at 33 (2007), *available at* http://www.calvert.com/pdf/ceres_calvert_sandp_500.pdf (noting significance of "physical risks . . . from severe weather, sea level rise, ecosystem impairment, and shifting ranges of pests and diseases" and that "[c]ompanies that may believe they face little risk may find that their supply chain is more vulnerable than they expected, or that physical or regulatory factors combine to raise the price of essential factors of production (most notably, energy)").

trends and uncertainties which may have a profound effect on the profitability and performance of a broad range of corporations. Frank analysis of how these changes in the physical environment will affect a corporation will give investors critical information about whether corporate management is truly prepared for the future.

c. The Impact of Climate Change on Businesses.

Until recently, the risks and opportunities associated with climate change have often been viewed as potentially significant at some indefinite point in the future, but as too uncertain to bear on corporate planning and actions in the near term. The emergence of scientific consensus about the existence and seriousness of climate change, the presence of major international climate policies, and the arrival of significant state level greenhouse gas regulation in the United States, have made climate change an immediate economic concern to corporations. Moreover, because of the long-term capital investments required to retool and reinvest for a carbon-constrained regulatory environment, decisions companies make now will determine their financial prospects as existing controls on emissions take effect and new carbon regulations are adopted. As one recent study put it: "[M]anagements and investors cannot assume that there will be time to react to policy when it is approaching implementation, because there are strategic structural factors such as access to resources and technology, or consumer mix, which take longer to shift."[63]

The costs and opportunities associated with the changing regulatory and physical environments bear directly on the financial condition and operations of many companies.[64] Regulation of greenhouse gas emissions imposes direct costs on major sources of greenhouse gas emissions and indirect costs on the companies that use their products and services. At the same time, these new regulatory developments will offer major opportunities for firms that can reduce emissions, thereby garnering marketable emissions credits or cost advantages over their competition, and for firms offering technologies and services needed to reduce emissions.[65]

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[63] ALLIANZ GROUP & WORLD WIDE FUND FOR NATURE, CLIMATE CHANGE & THE FINANCIAL SECTOR: AN AGENDA FOR ACTION 18 (2005), *available at* http://www.wwf.org.uk/filelibrary/pdf/allianz_rep_0605.pdf.

[64] *See id*. (discussing studies of impacts of the European Union's Emission Trading Scheme on different business sectors).

[65] *See* CERES, GLOBAL FRAMEWORK FOR CLIMATE RISK DISCLOSURE, *supra* note 37, at 8; *see also*, ASPEN INSTITUTE & CERES, THE WIRTH CHAIR 2004 LEADERSHIP FORUM: CLIMATE CHANGE RISKS AND THE SEC (Oct. 18, 2004); Lash & Wellington, *supra* note 37, at 100 (discussing supply chain risk); ALLIANZ GROUP & WORLD WIDE FUND FOR NATURE, *supra* note 63, at 17-20, 26, 32 (stating that

In addition, firms that are major greenhouse gas emitters and that do not have in place policies for reducing emissions face serious reputational risks.[66] On June 19, 2007, Climate Counts, an environmental non-profit group, released a scorecard detailing the climate related practices of major retail organizations, with the goal of influencing consumer purchasing habits against low scorers like Apple and Sara Lee.[67] The website release was covered in over 100 news articles worldwide in such prominent venues as CNNMoney and Forbes. Conversely, companies with large exposure to the retail market have the potential to build positive images with consumers and gain a competitive edge in their sector if they enact climate friendly policies.[68]

The dramatic hurricane season of 2005 demonstrated the potential physical risk to businesses from the increase in severe weather expected as part of climate change. Forty-three of the 100 largest members of the S&P 500, from a wide range of sectors including infrastructure, financial services, insurance, oil and gas, reported significant impacts from the 2005 hurricane season in their 10-K reports.[69] The insurance industry suffered $80 billion of insured weather-related losses in 2005, and many insurance consumers in at-risk regions have subsequently lost coverage or seen premiums rise as much as 500%.[70] In particular, Hurricanes Katrina and Rita caused damage of unprecedented cost across the Gulf Coast region. The hurricanes destroyed thousands of homes and businesses and damaged 113 offshore oil rigs, which sent shocks though the gasoline markets.[71] Allstate's 2005 10-Q report stated, "[l]osses in the third quarter of 2005 include estimates of $3.68 billion related to Hurricane Katrina and $850 million, net of reinsurance recoverable of $205 million, related to Hurricane Rita."[72]

"[c]arbon constraints will have different effects on the earnings of companies, both from sector to sector and within sectors," and enumerating climate-related risks and opportunities for insurers and the banking industry).

[66] *See* CARBON DISCLOSURE PROJECT, *supra* note 62; Lash & Wellington, *supra* note 37, at 100.

[67] Climate Counts, Scorecard Overview, http://climatecounts.org/scorecard.php.

[68] *See* John Llewellyn, *The Business of Climate Change*, LEHMAN BROTHERS, Feb. 2007.

[69] *See* CARBON DISCLOSURE PROJECT, *supra* note 62, at 24, 33-36, 72.

[70] *See* EVAN MILLS & EUGENE LECOMTE, CERES, FROM RISK TO OPPORTUNITY: HOW INSURERS CAN PROACTIVELY AND PROFITABLY MANAGE CLIMATE CHANGE (2006), *available at* http://www.ceres.org/pub/docs/Ceres_Insurance_Climate_%20Report_082206.pdf.

[71] *See id*.

[72] *See* Allstate Corp., Quarterly Report (Form 10-Q), at 7 (Nov. 1, 2005), *available at* http://ccbn.10kwizard.com/xml/download.php?repo=tenk&ipage=3757279&format=PDF.

Insurer AXA Group recently stated that, for insurance companies, climate change "is more important than interest rate risk or the foreign exchange risk."[73] Insurance industry catastrophe modelers forecast that significantly more costly storms than Katrina are possible and, indeed, inevitable. One analysis by A.M. Best Co. estimated that such storms, with $100 billion in losses, would bankrupt as many as 40 insurers.[74] Losses from the 2005 hurricane season already amounted to 50 to 100 times the insurers' typical yearly profit in the affected states. As noted in a 2007 report by the Government Accountability Office, "both major private and federal insurers are exposed to increases in the frequency or severity of weather-related events associated with climate change," and "many large private insurers are incorporating both near and longer-term elements of climate change into their risk management practices."[75]

A recent study of the oil and gas industry illustrates the multiple risks associated with climate change.[76] Because oil and gas production and consumption accounts for more than half of carbon dioxide emissions in the United States, and because the industry is characterized by long-term capital investment horizons, the industry faces substantial financial risks from regulatory developments including limits on greenhouse gas emissions. These limits pose competitive risks for oil and gas by driving the market toward low-carbon alternatives such as solar and wind power and biofuels. Purveyors of these alternative energy sources, in turn, enjoy opportunities that are the converse of the risks posed to the oil and gas sector.

The physical changes from climate change carry risks for the oil and gas industry as well. The damage to critical infrastructure from the 2005 hurricanes caused "nationwide petroleum shortages," a surge in gas prices, and supported the consumer trend toward hybrid and fuel efficient vehicles.[77] Climate change has placed at risk billions of dollars of long-term investments in pipelines and other infrastructure that depends on permafrost in Alaska, Canada, and elsewhere; the rapid thawing of frozen ground due to climate change leaves "[l]ong-term

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[73] CARBON DISCLOSURE PROJECT, CLIMATE CHANGE AND SHAREHOLDER VALUE IN 2004 8 (2004), *available at* http://www.cdproject.net/download.asp?file=cdp_report2.pdf.
[74] *See* MILLS & LECOMTE, *supra* note 70, at 4.
[75] GOV'T ACCOUNTABILITY OFFICE, CLIMATE CHANGE: FINANCIAL RISKS TO FEDERAL AND PRIVATE INSURERS IN COMING DECADES ARE POTENTIALLY SIGNIFICANT, 5, 14, (2004), *available at* http://www.gao.gov/new.items/d07820t.pdf; *see also* EVAN MILLS & EUGENE LECOMTE, *supra* note 70, at 4.
[76] MIRANDA ANDERSON, CIVIL SOCIETY INSTITUTE & CERES THE FUTURE OF OIL: ENERGY SECURITY, CLIMATE RISKS, AND MARKET OPPORTUNITIES 7 (2007), *available at* http://www.ceres.org/pub/docs/Future_of_Oil.pdf.
[77] *Id.* at 9.

capital investment . . . at risk of literally sinking away."[78] The CEO of Chesapeake Energy, a major natural gas producer, "declared that global warming is the 'single largest threat to the natural gas industry' because of its potential to decimate winter heating demand."[79]

The coal industry similarly demonstrates the risks companies can face from emerging and expected climate regulations. A July 25, 2007, front page *Wall Street Journal* article highlighted the increasing difficulty of building coal-fired generation, pointing to proposals for new coal-fired power plants in Texas, Florida, North Carolina, Oregon, and Minnesota that have been cancelled because "states [have concluded] that conventional coal plants are too dirty to build." The article reported that "[t]he rapid shift away from coal shows how quickly and powerfully environmental concerns, and the costs associated with eradicating them, have changed matters for the power industry."[80] At the same time, a wide range of policies, discussed above in Part 3.a, are designed to create incentives for cleaner power generation, including the statewide caps on greenhouse gas emissions adopted by California, Hawaii and New Jersey; the Regional Greenhouse Gas Initiative; California, Montana and Washington's emission performance standards for electricity providers; Renewable Portfolio Standards; and emerging Western regional and national cap and trade emission policies. As part of Citigroup's research services for its investors, Citigroup recently downgraded coal stocks "across the board" and recommended investors switch into other energy markets, in part due to increasing regulatory and reputational risk related to climate change.[81]

In response to present and probable state regulations, and in anticipation of comprehensive federal climate policy, many utilities and electric generation companies now incorporate a carbon price in planning decisions. These utilities have pointed to the increasing scientific certainty of climate change and the financial risk from current and future carbon regulations as justification for incorporating cost estimates for carbon abatement into long-term planning. Pacific Gas and Electric, Avista, Portland General Electric, Xcel-PSCCo, Idaho Power, and Pacificorp all now include a range of carbon costs into their long-term planning

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[78] *Id.* at 9.
[79] *Id.* at 9 (citing *Chesapeake CEO Says Low Gas Prices Will Eventually Rise*, CBSMARKETWATCH.COM (Oct. 3, 2006) (quoting Aubrey McClendon, CEO of Chesapeake Energy)).
[80] Rebecca Smith, *Coal's Doubters Block New Wave of Power Plants*, WALL ST. J., July 25, 2007, at A1.
[81] *See* JOHN H. HILL & GRAHAM WARK, CITIGROUP GLOBAL MARKETS, COAL: MISSING THE WINDOW (2007).

calculations.[82] In California, the Public Utility Commission requires the use of carbon risk values for long-term planning or procurement decisions.[83] The failure to adequately address carbon dioxide regulatory risks was part of the reason a proposed new Florida coal plant was recently rejected by the Florida utility commission: many of the cost scenarios that incorporated carbon abatement values showed that the proposed plant was not a cost-effective choice.[84] Electricity generation companies already hedge their decisions in the face of numerous uncertainties, including future fossil fuel prices, construction expenses and consumer demand, among many others; expenses related to carbon abatement have now become another key variable in corporate strategy and planning.

Though they present significant financial risks for many companies, existing and future greenhouse gas regulations can also present significant opportunities for companies to prosper. Companies that capitalize on new opportunities or technologies that will benefit from climate change have the potential to earn substantial income and large returns for investors. For example, companies positioned to take advantage of carbon trading opportunities have the potential to profit enormously. Global carbon trading markets were worth $30 billion in 2006, and some have estimated that the value of a future carbon market could reach as high as $15 trillion.[85] In addition, recent policy efforts to support renewable energy and increasing consumer interest have led to tremendous growth in wind, solar, and biofuel energy markets. Between 1997 and 2005, globally installed wind turbine capacity experienced a compound annual growth rate of 29%, in part due to the implementation of Renewable Portfolio Standards or Renewable

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[82] *See* SYNAPSE ENERGY ECON., INC, CLIMATE CHANGE AND POWER: CARBON DIOXIDE EMISSIONS COSTS AND ELECTRICITY RESOURCE PLANNING (2006).

[83] California Climate Change Portal, State of California Agencies' Roles in Climate Change Activities, http://www.climatechange.ca.gov/policies/state_roles.html.

[84] Smith, *supra* note 80, at A1.

[85] Even in the absence of a national emissions trading program in the United States, many U.S.-based multinational corporations are involved in GHG emissions trading overseas. *See, e.g.*, GRI/KPMG STUDY, *supra* note 43, at 17 (noting that nearly half of the companies studied who were based in the United States and Australia—nations that have not ratified the Kyoto Protocol—"still reported on emissions trading" in their sustainability reports, likely because "multinational companies based in USA and Australia often have overseas operations in regions that are involved in emissions trading"). Because of the high likelihood that a program limiting greenhouse emissions will involve emissions trading—as do all the many climate bills currently before Congress—opportunities for American companies are likely to increase.

Energy Targets in at least 18 countries, 25 states, and the District of Columbia.[86] Emerging state and federal legislation will further support the expansion of these and other low polluting industries.

Even in sectors that are likely to be heavily affected by climate regulations, climate change can present an opportunity to capitalize on changing consumption patterns and new regulatory incentives. Within particular industries, firms' ability to adjust to the challenges posed by the rapidly changing legal and regulatory environment will provide an important source of competitive advantage; firms that are slower to adapt will face corresponding disadvantages. In particular, the automobile industry demonstrates how companies' responses to climate change can determine whether global warming will present a risk or an opportunity. Over a decade ago, many automakers began developing hybrid car product lines to prepare for a carbon-constrained economy. Now existing international regulations, rising gas prices, and public concern over greenhouse emissions are leading to strong sales of hybrid and fuel efficient vehicle lines and positive public reputations for corporations that produce fuel efficient vehicles. Low carbon and energy efficiency product lines are proving a significant advantage for forward-thinking firms.

4. Climate Risk Is Increasingly Important to Investors.

The standard by which information's materiality is judged is whether a reasonable investor would consider the information an important part of his or her assessment of a corporation's value.[87] As shown above, climate change can present a wide range of risks and opportunities for a wide range of sectors, leading McKinsey, Marsh, and others to identify climate risk as a major factor in determining shareholder value. As a result, the market is answering the increasingly loud call for climate risk information that enables investors to determine whether and how corporations are prepared to deal with the many regulatory and physical challenges of climate change. The growing availability of these climate risk information services demonstrates investors' critical need for this type of analysis. However, the private services currently available fail to meet investors' need for consistent, widely available disclosure of climate risk.

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[86] *See* EDWARD M. KERSCHNER & MICHAEL GERAGHTY, CITIGROUP GLOBAL MARKETS, CLIMATIC CONSEQUENCES 68 (2007).

[87] *See* Basic Inc. v. Levinson, 485 U.S. 225, 240 (1988); TSC Industries v. Northway, Inc., 426 U.S. 438, 440 (1976).

a. Climate-Related Advisory Services, Investment Research, Funds, and Indices.

Investment firms and consulting agencies have responded to this significant and growing demand for information on climate risk by creating advisory services, investment research, funds and indices that analyze the business implications of climate change. New climate risk advisory services include:

- PriceWaterhouseCoopers' Climate Change Services Group, which "offers a broad range of advisory, assurance and specialist services that collectively guide clients through the complexities of climate change."[88]

- Innovest's Carbon Finance Practice**,** including their proprietary Carbon Beta™ analytics platform that analyzes "1. Absolute and relative risk exposures for individual companies. 2. Their capacity to manage these risks. 3. Their ability to identify and capture the upside commercial opportunities being created."[89]

- JP Morgan's Climate Change Investment Research practice, which provides investment research on business risks and opportunities related to climate change.[90]

Numerous firms have produced detailed research studies on the investment implications of climate change for business in general and for specific sectors. Recent titles include:

- Kerschner, E.M., and Geraghty, M. Citigroup. 2007. Climatic Consequences: Investment Implications of a Changing Climate. Citigroup Equity Research.

  > "For investors, the issue is not whether climate change is occurring. Today a variety of entities (governments, regulators, corporations, and individuals) are reacting to the perceived climate change threat, creating a number of near-term opportunities." Pg. 1

- Llewellyn, J. 2007. The Business of Climate Change: Challenges and Opportunities. Lehman Brothers.

  > "In the world of business and finance, climate change has developed from being a fringe concern, focusing on the company's brand and its Corporate and Social

[88] PricewaterhouseCoopers, Climate Change Services, http://www.pwc.com/extweb/service.nsf/docid/0c334e23eb5d6b3aca2572e9001c5edc.
[89] Innovest Strategic Value Advisors, Carbon Finance Practice, http://www.innovestgroup.com/index.php?option=com_content&task=view&id=21&Itemid=36.
[90] JPMorgan, Climate Change Investment Research, http://www.jpmorgan.com/pages/jpmorgan/investbk/solutions/research/climatechange.

> Responsibility, to an increasingly central topic for strategic deliberation and decision-making by executives and investors around the globe. . . . Global warming, we judge, is likely to prove one of those tectonic forces that . . . gradually but powerfully changes the economic landscape in which our clients operate, and one that causes periodic sharp movements in asset prices. And, as the title indicates, we consider that climate change poses many challenges but also presents many business opportunities. Firms that recognize the challenge early, and respond imaginatively and constructively, will create opportunities for themselves and thereby prosper. Others, slower to realize what is going on or electing to ignore it, will likely do markedly less well." Pg. 1

- Allianz Group and WWF. 2005. Climate Change and the Financial Sector: An Agenda for Action.

> "[Greenhouse gas policies] will alter the economics of entire industries. They will affect company share prices, both positively and negatively . . . The most sensitive sectors are either energy-intensive, such as cement, aviation, metals or energy industries such as oil and gas, coal, power utilities; or provide energy-consuming products such as automobiles." Pg. 5

- Citigroup. 2007. CO_2—A New Auto Investor Issue for 2007.

- Citigroup. 2006. Investing in Solutions to Climate Change.

- Citigroup. 2006. Carbon Limits are Coming.

- Dresdner Kleinwort. 2007. CO_2 Penalty Scenarios for Auto Industry.

- JP Morgan. 2005. Cars and Climate Change: A Regulatory Battle Brings Risks for Investors.

- Merrill Lynch. 2005. Energy Security and Climate Change: Investing in the Clean Car Revolution.

- Merrill Lynch. 2006. Alternatives for Clean Car Evolution.

- UBS. 2007. UBS Research Focus—Climate Change: Beyond Whether. UBS Wealth Management.

- Bernstein Research. 2006, Prospects for CO2 Emission Limits, and Their Implications for the Power Industry.

- Prudential Equity Group Research. 2004. Electrifying Future for Hybrids.

- Sustainable Asset Management. 2003. Changing Drivers: The Impact of Climate Change on Competitiveness and Value Creation in the Automotive Industry.

- Sustainable Asset Management. 2005. Transparency Issues with ACEA Agreement: Are Investors Driving Blindly?

- Societe Generale Equity Research. 2007. CREAM-ing Carbon Risk: European Carbon Winners and Losers.

A variety of market funds and indices are also appearing that allow investors to profit from new climate related opportunities or hedge against the risks of climate change. Recent offerings include:

Indices

- UBS's Global Warming index, a tradable benchmark for weather derivative investments, allows companies to hedge their profits against the uncertainties of climate change. This new index is only one sign of the increasing liquidity of the weather derivatives market.[91]

- UBS's index of emissions allowances in global carbon trading markets. Called the UBS-WEMI, the index is a basket of future contracts from the EU Emissions Trading Scheme, weighted between the two main trading platforms, the European Climate Exchange and the Nordic Power Exchange.[92]

- Merrill Lynch's Energy Efficiency Index, which tracks 40 global companies in the automotive, building materials, capital goods, and semiconductors sectors that stand to benefit from improved energy efficiency. This new index joins with Merrill Lynch's existing Renewable Energy Index.[93]

- ABN Amro's equity index that tracks firms that address climate change and other environmental issues. The index is primarily composed of renewables, water, and waste management companies. Boston-based KLD and Milan-based E.Capital Partners have also recently launched similar indices.[94]

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[91] Press Release, UBS, UBS Investment Bank Launches - UBS Global Warming Index (Apr. 24, 2007), *available at* http://www.ubs.com/1/e/media_overview/media_emea/mediareleases?newsId=117789.
[92] *See UBS Launches Market Index for Emissions,* TERRA DAILY, Nov. 2, 2006, *available at* http://www.terradaily.com/reports/UBS_Launches_Market_Index_For_Emissions_999.html.
[93] *See* Press Release, Merrill Lynch, Merrill Lynch Introduces New Energy Efficiency Index (July 30, 2007), *available at* http://www.merrilllynch.com/?id=7695_7696_8149_74412_80055_80859.
[94] Environmental Finance, ABN Amro Launches Climate Change Index, http://www.environmental-finance.com/onlinews/0329abn.htm.

Funds

- Calvert's Global Alternative Energy Fund was initiated May 31, 2007. As of September 10, 2007, it has $20 million in assets under management.[95]

- Allianz RCM Global EcoTrends Fund was initiated January 28, 2007. As of July 31, 2007, it has $126 million in assets under management.[96]

- Guinness Atkinson's Alternative Energy Fund was initiated March 31, 2006.[97] As of July 31, 2007, it has over $126 million in assets under management.[98]

- Winslow Green Growth Fund was initiated in May 3, 1994. As of July 30, 2007, it has $259 million in assets under management.[99]

- New Alternatives Fund was initiated in September 1982.[100] As of July 31, 2007, it has almost $232 million in assets under management.[101]

While these products are helping to address the market's demand for climate risk information, the need for access to this information is far greater than can be met by these vehicles. More fundamentally, material information of this importance should not be available only privately and for hire. To the extent that material nonpublic information about climate risks is being disclosed in a selective way, those disclosures would violate Regulation FD, 17 C.F.R. Pt. 243, which requires that material information be publicly disclosed to the *entire market*. As the Commission noted when it promulgated Regulation FD, selective disclosure threatens the integrity of the market and undermines investor confidence. Furthermore, there is particular peril when analysts are privy to information that is not shared with the market as a whole:

> [T]he regulation [FD] likely also will provide benefits to those seeking unbiased analysis. This regulation will place all analysts on equal footing with

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[95] Calvert Online, Calvert Global Alternative Energy Fund (CGAEX), http://www.calvert.com/funds_profile.html?fund=971 (click on Fund Management/Investment tab).
[96] Allianz Global Investors, Allianz RCM Global EcoTrendsSM Fund A (AECOX) Performance, http://www.allianzinvestors.com/mutualFunds/profile/RCGET/performance_A.jsp.
[97] GUINNESS ATKINSON, ALTERNATIVE ENERGY FUND: FUND FACTS (2007), *available at* http://www.gafunds.com/alt.pdf.
[98] Yahoo! Finance, Guinness Atkinson Alternative Energy (GAAEX), http://finance.yahoo.com/q?s=GAAEX.
[99] WINSLOW MANAGEMENT COMPANY, L.L.C., WINSLOW GREEN GROWTH FUND: SECOND QUARTER 2007 at 2 (2007), *available at* http://www.winslowgreen.com/admin/documents/General/Fact%20Sheet.pdf.
[100] New Alternatives Fund, Company Overview, http://www.newalternativesfund.com/about/about_overview.html.
[101] Yahoo! Finance, New Alternatives (NALFX), http://finance.yahoo.com/q?s=nalfx.

> respect to competition for access to material information. Thus, it will allow analysts to express their honest opinions without fear of being denied access to valuable corporate information being provided to their competitors. Analysts will continue to be able to use and benefit from superior diligence or acumen, without facing the prospect that other analysts will have a competitive edge solely because they say more favorable things about issuers.[102]

b. Investor Initiatives to Improve Corporate Climate Risk Disclosure.

Various coalitions of investors and environmental groups have responded to the lack of meaningful corporate climate risk information by educating themselves about climate change, seeking improved disclosure, and developing models for voluntary climate-related disclosures.

- Ceres, the largest coalition of investors, environmental and public interest organizations in North America, has organized the Investor Network on Climate Risk, a coalition representing more than $4 trillion in assets under management.[103] Globally, two other investor groups are solely focused on climate risk: the Institutional Investors Group on Climate Change (U.K.) and the Investors Group on Climate Change (Australia/New Zealand).

- The Carbon Disclosure Project is an independent, international, not-for-profit organization aiming to create a lasting relationship between shareholders and corporations regarding the implications for shareholder value and commercial operations presented by climate change. The Carbon Disclosure Project seeks information on the business risks and opportunities presented by climate change and greenhouse gas emissions data from the world's largest companies on behalf of institutional investors with a combined $41 trillion of assets under management.[104] Carbon Disclosure Project members include major financial institutions including ASN Bank, ABN Amro, HSBC, Morgan Stanley, Royal Bank of Scotland Group, and Swiss Reinsurance Company.

- The Global Reporting Initiative is an international program working to make uniform reporting on economic, environmental, and social performance as routine and comparable as financial reporting.[105] The Global Reporting Initiative's Sustainability Reporting Framework, used by over 1,000 organizations worldwide, now includes "financial implications . . . due to climate change" as a core indicator for corporate reporting.[106]

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[102] Sec. & Exch. Comm'n, Selective Disclosure and Insider Trading, 65 Fed. Reg. 51,716, 51,731 (Aug. 24, 2000) (codified at 17 C.F.R. pt. 243 (2007)), *available at* http://www.sec.gov/rules/final/33-7881.htm.
[103] *See* Investor Network on Climate Risk, http://www.incr.com/.
[104] *See* Carbon Disclosure Project, http://www.cdproject.net/.
[105] *See* Global Reporting Initiative, http://www.globalreporting.org/.
[106] Global Reporting Initiative, Performance Indicators, http://www.casba.info/docs/GRIPerformanceIndicators.pdf.

- The Climate Disclosure Standards Board is an international partnership of seven organizations announced at the World Economic Forum in Davos in January, 2007. Founding members include the California Climate Registry, Carbon Disclosure Project, Ceres, The Climate Group, International Emissions Trading Association, World Economic Forum Global Greenhouse Gas Register, and World Resources Institute. [107] This coalition aims to create a reporting standard to ensure that companies "report climate change-related information in a standardized way that facilitates easier comparative analysis by investors, managers and the public."[108]

Several of these groups have already sought Commission action to clarify existing disclosure obligations regarding climate risk. On March 19, 2007, 65 institutional investors, foundations and companies managing $4 trillion issued a Call to Action asking for strong federal climate legislation.[109] In the Call to Action, investors specifically asked for "[g]uidance from the Securities and Exchange Commission and other financial regulatory bodies to businesses and investors on what material issues related to climate change companies should disclose in their regular financial reporting, so that investors can assess more accurately the effects of climate risk and opportunity in their portfolios."[110]

Last year, the Investor Network on Climate Risk coordinated a group of 28 large institutional investors that wrote the Commission to request a clarifying statement that publicly traded corporations must disclose the financial risks presented by climate change.

The Investor Network on Climate Risk letter signatories include innovative investment funds such as Trillium in the United States and F&C Asset Management in the UK; state treasurers, controllers, and public employee pension funds from New York, New Jersey, California, Oregon, Vermont, Connecticut, Kentucky and British Columbia; four major unions representing over 3 million workers; and many other investors. Together they asked the Commission to take the following steps to improve corporate disclosure:

- Enforce existing disclosure requirements on material risks such as climate change, which are underreported;

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[107] *See* Press Release, World Econ. Forum, New Consortium Created to Develop Standard Framework for Company Reporting of Climate Risks (Jan. 26, 2007), *available at* http://www.weforum.org/en/media/Latest%20Press%20Releases/emissions_press_release.
[108] *See id.*
[109] CERES & INVESTOR NETWORK ON CLIMATE RISK, CAPITAL TO THE CAPITOL: INVESTORS AND BUSINESS FOR U.S. CLIMATE ACTION (Mar. 19, 2007), *available at* http://www.ceres.org/pub/docs/Call_to_action.pdf.
[110] *See id.* at 1.

- Strengthen current disclosure requirements, for example by providing interpretive guidance on the materiality of risk posed by climate change; and

- Revise or change the Staff's interpretation of Rule 14a-8's "ordinary business" exclusion to require a registrant to include in its proxy statement a shareholder proposal asking the registrant to report on financial risks due to climate change.[111]

Investor groups, including Investor Network on Climate Risk, the Institutional Investors Group on Climate Change, the Investor Group on Climate Change, the Carbon Disclosure Project and the Global Reporting Initiative, all participated in the Climate Risk Disclosure Initiative, an effort to improve corporate disclosure of the risks and opportunities posed by global climate change. That initiative culminated in the October 2006 release of the Global Framework for Climate Risk Disclosure. The framework is a statement of investor expectations for comprehensive corporate disclosure of four types of climate-related information:

1. Emissions: "As an important first step in addressing climate risk, companies should disclose their total greenhouse gas emissions. Investors can use this emissions data to help approximate the risk companies may face from future climate change regulations."

2. Strategic Analysis of Climate Risk and Emissions Management: "Investors are looking for analysis that identifies companies' future challenges and opportunities associated with climate change. Investors therefore seek management's strategic analysis of climate risk, including a clear and straightforward statement about implications for competitiveness. Where relevant, the following issues should be addressed: access to resources, the timeframe that applies to the risk, and the firm's plan for meeting any strategic challenges posed by climate risk."

3. Assessment of the Physical Risks of Climate Change: "Climate Change is beginning to cause an array of physical effects, many of which can have significant implications for companies and their investors. To help investors analyze these risks, investors encourage companies to analyze and disclose material, physical effects that climate change may have on the company's business and its operations, including their supply chain."

4. Analysis of Regulatory Risks: "As governments begin to address climate change by adopting new regulations that limit greenhouse gas emissions, companies with direct or indirect emissions may face regulatory risks that could have significant

[111] Petition from Investor Network on Climate Risk to Chairman Cox, Sec. and Exch. Comm'n (June 14, 2006), *available at* http://www.ceres.org/pub/docs/Ceres_INCR_SEC_letter_061406.pdf.

implications. Investors seek to understand these risks and to assess the potential financial impacts of climate change regulations on the company."[112]

Shareholders are also pressing for disclosure from individual companies. Forty-five shareholder resolutions specifically related to climate change or renewable energy have been filed to date in 2007. These petitions accounted for over ten percent of all shareholder resolutions submitted this year. Shareholder resolutions have been filed by Calvert Asset Management, New York City's pension funds, the American Federation of State, County, and Municipal Employees, Trillium Asset Management, Service Employees International Union, among many others.[113]

c. International Efforts to Improve Climate Risk Disclosure.

The insistent chorus demanding more information on climate risk in American markets reflects the growing demand for this information around the world.[114] An increasing number of foreign nations are issuing specific guidance on climate risk disclosure through accounting bodies or government agencies.

- In 2005, the Canadian Institute of Chartered Accountants issued the first climate risk disclosure guidance by an accounting body, "MD&A Disclosure about the Financial Impact of Climate Change and Other Environmental Issues."[115] This guidance provides best practices for climate risk disclosure and outlines existing regulatory requirements that apply to climate and environmental risk disclosure.

- The E.U. Accounts Modernization Directive (2004/109/EC)[116] outlines companies' needs to disclose environmental Key Performance Indicators (KPIs), where appropriate, including climate change statistics.

- The UK Department for Environment, Food and Rural Affairs has issued guidance that outlines best practices for companies using these KPIs.[117] These guidelines describe how

[112] CERES, *supra* note 37, at 8.
[113] Carolyn Mathiasen, *2007 Proxy Season Preview: Environmental Issues*, Governance Weekly, INSTITUTIONAL SHAREHOLDER SERVS., http://www.issproxy.com/governance_weekly/2007/004.html.
[114] GRI/KPMG STUDY, *supra* note 43, at 8 (noting in report issued in July 2007 that "demand for focused and effective reporting on the business implications of climate change has continued to grow over the last two years").
[115] CANADIAN PERFORMANCE REPORTING BD., MD&A DISCLOSURE ABOUT THE FINANCIAL IMPACT OF CLIMATE CHANGE AND OTHER ENVIRONMENTAL ISSUES (Oct. 2005), *available at* http://www.cica.ca/client_asset/document/3/5/2/0/3/document_534147DD-E5C6-3AE6-59CB372755E43A4A.pdf.
[116] *See* Directive 2004/109/EC of the European Parliament and of the Council of 15 December 2004, 390 OFFICIAL J. EUR. UNION 38, http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2004:390:SOM:EN:HTML.

environmental data, including climate related data and greenhouse gas emissions, should be measured and reported, helping companies to meet the narrative reporting requirements outlines in the Company Law Reform Bill.

Clarification of the need to disclose material climate risks under U.S. law would be consistent with the Commission's increasing emphasis on harmonizing disclosure requirements with international standards. As the Commission recognized in its recent concept release on this subject, U.S.-listed firms benefit from "comparability of information across national borders."[118] If American firms do not provide the same level of climate-related disclosure as their international counterparts, there is a risk that they will find themselves at a disadvantage in a global financial market in which investors are aggressively seeking to identify those firms best prepared to take advantage of the new opportunities, and avoid the risks, of a carbon-constrained business environment.

d. Climate Risk Disclosure Is Needed to Allow Investors to Fulfill Their Fiduciary Duties.

For the many investors who invest on behalf of others, demanding better disclosure of companies' climate-related risks is consistent with their fiduciary duties. The standard of prudence to which investing fiduciaries are held is rooted in common law and further defined by the Restatement (Third) of Trusts and the Uniform Prudent Investor Act (UPIA) drafted by the National Conference of Commissioners on Uniform State Laws.[119] Forty-four states and the District of Columbia have adopted a prudent investor rule based upon these two sources to govern and guide a trustee's actions.[120] Investment advisors have been held to similar standard of conduct.[121] And federal regulation of pension trusts has absorbed the prudent-investor rule by way of the Employee Retirement Income Security Act (ERISA), 29 U.S.C. § 1001 et seq., which

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[117] *See* DEP'T FOR ENV'T, FOOD & RURAL AFFAIRS, ENVIRONMENTAL KEY PERFORMANCE INDICATORS: REPORTING GUIDELINES FOR UK BUSINESS (2006), *available at* http://www.defra.gov.uk/environment/business/envrp/pdf/envkpi-guidelines.pdf.

[118] Sec. and Exch. Comm'n, Release No. 33-8831, Concept Release on Allowing U.S. Issuers to Prepare Financial Statements in Accordance with International Accounting Standards, 72 Fed. Reg. 45,600 (Aug. 14, 2007).

[119] *See* Robert J. Aalberts & Percy S. Poon, *Derivatives and the Modern Prudent Investor Rule: Too Risky or Too Necessary?*, 67 OHIO ST. L.J. 525, 525-26 (2006).

[120] *See id*. at 526 nn.4-5.

[121] *See* Transamerica Mortgage Advisors, Inc. v. Lewis, 444 U.S. 11, 17-19 (1979) (recognizing a private right of action against investment advisors under the Investment Advisors Act of 1940 for breach of fiduciary duties).

incorporates the principle in section 1104(a).[122] Corporate directors have a fiduciary duty of care to shareholders that mirrors the prudent-investor standard.[123]

UPIA and the Restatements (Third) of Trusts reiterate the traditional requirement that the prudent investor must consider the surrounding economic circumstances relevant to an investment.[124] For many companies, the climate-related risks described in this petition are part of those economic circumstances. Long investment horizons, like those of pension funds, sharpen the need to consider climate-related risks in making investment decisions, as the physical effects of climate change, even in the best-case scenario, and the proliferation of greenhouse gas regulation, will be influencing businesses and development for the next century and beyond.

The modern prudent-investor rule also includes a duty to diversify,[125] and to consider the investment portfolio as a whole rather than a set of isolated investments.[126] The risks presented to companies by global climate change may well tie investments together in ways not before considered. For example, a portfolio with heavy investment in a single geographical region, though spread across several industrial sectors, may not be sufficiently diverse if that region is vulnerable to physical effects of climate change such as increasing storm frequency and intensity, rising sea levels, or potential water shortage.

The "prudent investor," who provides the standard for fiduciary duty, would be concerned about various forms of climate risk affecting many companies. The current state of scattered and inconsistent disclosures concerning climate risks, described in the following section, hinders investors' ability to fulfill this duty.

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[122] *See* Firestone Tire & Rubber Co. v. Bruch, 489 U.S. 101, 110-11 (1989) ("ERISA's legislative history confirms that the Act's fiduciary responsibility provisions . . . codif[y] and mak[e] applicable to [ERISA] fiduciaries certain principles developed in the evolution of the law of trusts."); UNIF. PRUDENT INVESTOR ACT, 7B U.L.A. 18 (prefatory note) (discussing implications for charitable and pension trusts).

[123] *See*, *e.g.*, Jackson v. Ludeling, 88 U.S. 616, 616 (1874) ("The managers and officers of a company where capital is contributed in shares, are in a very legitimate sense trustees, alike for its stockholders and its creditors, though they may not be trustees technically and in form"); Loft, Inc. v. Guth, 2 A.2d 225, 238 (Del. Ch. 1938) ("[T]he directors of a corporation stand in a fiduciary relation to the corporation and its stockholders. Their acts are subject to be tested by the familiar rules that govern the relations of a trustee to his cestui que trust").

[124] *See*, *e.g.*, Harvard College v. Amory, 26 Mass. (9 Pick.) 446, 461 (1830) (stating that investors of prudence consider the "probable income, as wells as the probable safety of the capital to be invested").

[125] *See* UNIF. PRUDENT INVESTOR ACT § 3; RESTATEMENT (THIRD) OF TRUSTS § 227(b).

[126] *See* UNIF. PRUDENT INVESTOR ACT § 2(b); RESTATEMENT (THIRD) OF TRUSTS § 227(a).

5. Climate Risk Is Not Being Adequately Disclosed.

Despite growing investor demands, many companies currently release little information about their exposure to climate risk and their preparedness to address those risks. Even in industries characterized by very high greenhouse gas emissions, and in those subject to direct regulation of those emissions, registrants' 10-K reports often contain only cursory descriptions of climate risks, if they contain any description at all. Among those companies that are currently disclosing information about climate risks, there is very little consistency in the format or level of detail of information presented. Lack of consistency in disclosures makes it difficult or impossible for investors to compare different corporations' respective exposures to and preparedness for climate change in order to make informed investment decisions. Voluntary disclosures of climate risks by a handful of corporations, through such means as "sustainability reports," have proven somewhat more revealing than 10-K reports. But these voluntary efforts do not meet the market's need for consistent and uniform information that will allow investors to compare and evaluate corporations' exposure to climate risk.

a. SEC Filings.

Current corporate practices on climate disclosures in SEC filings vary widely from complete silence to detailed discussions of emissions, risks and plans. The most systematic review of disclosure practices now available is contained in annual surveys prepared by Michelle Chan-Fishel for Friends of the Earth for the years 2001 through 2006. Friends of the Earth reviewed the 10-K reports of corporations in the automobile, insurance, oil and gas, petrochemical, and utilities sectors in each of those years.

This longitudinal study provides a telling perspective on the progress of climate change disclosure practices. Copies of the fifth and most recent Friends of the Earth report, *Fifth Survey of Climate Change Disclosure in SEC Filings of Automobile, Insurance, Oil & Gas, Petrochemical, and Utilities Companies*, October 2006 (hereinafter Fifth Survey), are being submitted with this petition.[127] The Fifth Survey reviewed both the rate at which 112 publicly traded companies in five industrial sectors included any mention of climate risk—even if only

[127] MICHELLE CHAN-FISCHEL, FRIENDS OF THE EARTH, FIFTH SURVEY OF CLIMATE CHANGE DISCLOSURE IN SEC FILINGS OF AUTOMOBILE, INSURANCE, OIL & GAS, PETROCHEMICAL, AND UTILITIES COMPANIES (2006) [hereinafter FIFTH SURVEY], *available at* http://www.foe.org/camps/intl/SECFinalReportandAppendices.pdf.

fragmentary—in their required disclosures, and the quality of those disclosures. The following excerpt summarizes some of its key findings:

> *Reporting Rates*
>
> The overall climate reporting rate is 49 percent (2005 SEC filings), compared with 26 percent in 2000. However, reporting rates between the various sectors vary substantially. Over the past five years, dramatic improvement has occurred among the oil and gas sector, which now has an impressive reporting rate of 78 percent today, compared with 37 percent five years ago. Notably, the electric utilities sector achieved complete reporting rate with 100 percent of the utilities surveyed providing climate risk; five years ago only half of the electric utilities offered climate reporting to shareholders.
>
> Unfortunately, disclosure rates in other sectors are holding steady and remain much lower, with significant underreporting among insurance and petrochemicals sectors. Only 19 percent of insurers and 28 percent of petrochemicals companies provided climate reporting, and these rates have remained relatively flat over the past few years. Reporting rates are also low and flat among the auto industry; 26 percent of auto manufacturers, including most of the auto majors, provide climate reporting. Finally, the report finds that with the exception of the utilities industry, European companies continued to report at much higher rates than their U.S. counterparts, reflecting the advances in climate policies outside the U.S.
>
> *Quality of Reporting*
>
> The quality of climate reporting has generally improved, although it still varies widely between companies. The most common types of climate reporting include discussion of the Kyoto Protocol and other climate legislation/regulations, the financial impact of these policies on the company's sector and business, and the firm's response to these policies. Companies are also increasingly disclosing carbon dioxide emissions, and highlighting climate issues by dedicating discrete sections to this topic in SEC filings, or listing climate change as a Key Risk or Risk Factor. In addition, a few companies now provide governance-related information on how they are managing climate risk.
>
> The survey also finds that companies differ in their assessment of financial risks posed by climate change. While about 16 percent of reporting companies avoided the "bottom line" question, the remainder of climate reporters tried to address how climate policies could impact them: 9 percent of reporting companies addressed this question by simply saying that it was impossible to predict the financial impact of climate risks. 49 percent of climate reporters admitted that climate-related risks could indeed pose a material adverse impact on the firm or create significant new costs, even though these costs were often difficult to estimate. 15 percent of companies

> said that climate risks would have mixed results on their firm, while 11 percent concluded that global warming would pose little or no impact.

Fifth Survey, Executive Summary.

The Appendices to the Fifth Survey contain excerpts of corporate disclosures that illustrate the broad variety in the level of information disclosed. Among those companies that addressed climate change in 10-K reports, various disclosures included general descriptions of existing laws on greenhouse gases, actual emissions data, conclusory statements about the impossibility of determining the cost of potential regulations, and, in some cases, company-specific assessment of impact of greenhouse gas limitations. This inconsistent patchwork of disclosure is just the type of problem that led the major accounting firms to petition the Commission in December 2001 for clarification of the MD&A requirements. Then, the accounting firms noted that "[w]hile many registrants provide high quality, transparent disclosures, many other public companies provide boilerplate or very high-level disclosures that provide little or no meaningful information."[128] Just as the SEC responded to this request in its various Sarbanes-Oxley interpretive releases, we call on the Commission to provide guidance to clarify that companies must file meaningful, transparent disclosures on climate risk that will allow investors to make informed decisions.

The inconsistent and inadequate state of current climate risk disclosure documented in the Fifth Survey reflects corporate disclosure of environmental risks in general. In 2004, Senators Jeffords, Corzine and Lieberman requested that the Government Accountability Office review the state of environmental disclosures in SEC filings. The resulting report, *Environmental Disclosure: SEC Should Explore Ways to Improve Tracking and Transparency of Information*,[129] made the following observations about the difficulty of assessing environmental disclosures:

> Assessing companies' disclosure of environmental information is difficult, primarily because researchers have no way of knowing what environmental information is (1) potentially subject to disclosure and (2) material in the context of a company's specific circumstances, and therefore required to be reported. Because company records are generally not publicly available, it is virtually impossible for an external party to know what information companies should be disclosing.[130]

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[128] Petition of Arthur Andersen LLP et al. to Sec. & Exch. Comm'n for Issuance of Interpretive Release (Dec. 31, 2001), *available at* http://www.sec.gov/rules/petitions/petndiscl-12312001.htm.
[129] GOV'T ACCOUNTABILITY OFFICE, *supra* note 75.
[130] *Id.* at 13.

The GAO further noted the limitations of environmental reporting:

> One of the consequences of disclosure requirements that are subject to interpretation—and of not having direct access to company records—is the difficulty of determining with any certainty whether a low level of disclosure indicates that the company does not have existing or potential environmental liabilities, has determined that such liabilities are not material, or is not adequately complying with disclosure requirements. The varying formats used for disclosure pose another problem for researchers. Much of the environmental information that is subject to disclosure can be reported in a number of different sections of the 10-K filing, including the financial statements, related footnotes, and various narrative sections of the report. In addition, the information may be stated in general or specific terms and companies often use different terminology to describe similar issues.[131]

Current practices on environmental disclosure all too often leave investors in the dark about the financial implications of environmental issues and liabilities. Without a clear statement from the Commission on the need to disclose climate risks, this existing, inadequate model of environmental liability disclosure provides the model for climate risk disclosures as well. This model is simply too limited to accurately reflect the financial issues raised by climate change or to provide investors the information they need to make sound investment decisions.

b. Voluntary Climate Disclosures.

In the absence of consistent reporting of climate risks in required SEC filings, investor and environmental groups have resorted to asking companies directly about their climate risks. Many of the consortiums described above in Part 4 have made requests for voluntary disclosure of climate information. Most recently, Ceres and Calvert issued a January 2007 report on the results of a questionnaire based on the Carbon Disclosure Project sent to all S&P 500 companies in 2006. The report, *Climate Risk Disclosure by the S&P 500*,[132] made the following key findings about companies' voluntary disclosures in response to this survey:

- *Poor Response Compared to Overseas Companies*: U.S. companies lag well behind their foreign competitors in climate risk disclosure. Only 47 percent of the S&P 500 companies answered the Carbon

[131] *Id.* at 17. The GAO recommended that the SEC implement new practices to aid the public in evaluating deficiencies in environmental disclosures such as producing a database of SEC comment letters and company responses. The GAO also advised the SEC to coordinate more effectively with EPA on data sharing relevant to environmental disclosure. *Id.* at 36-37.

[132] *See* CARBON DISCLOSURE PROJECT, *supra* note 62, at 1-2.

Disclosure Project questionnaire, as opposed to 72 percent among the FT 500. The companies who are likely to have received the questionnaire in past years had a higher response rate—67 percent—than the companies that received the questionnaire for the first time in 2006, 31 percent of which responded. Low response rates among U.S. companies make company-to-company comparisons—both domestically and globally—very difficult for investors evaluating climate risk.

- *Ignoring Investors' Right to Know*: Seventy companies that responded to the questionnaire—nearly a third of the respondents—did not allow their responses to be made public. As a result, only the 225 signatories to the CDP have access to those responses. Given that climate change poses risks to all investors, it would be greatly preferable for companies to make their disclosures public.

- *Poor GHG Emissions Management*: Eighty percent of the companies that responded (182 companies) addressed the need to reduce greenhouse gas emissions, but only a quarter (59 companies) disclosed measurable emissions reductions targets and specific time frames for reduction.

- *Physical Impacts Not on Radar Screen*: Nearly 75 percent of the responding companies (171 companies) acknowledged bottom-line risks associated with extreme weather events such as hurricanes, fires and floods. However, very few companies link more extreme weather to climate change and fewer still—only four percent—disclosed strategies for mitigating and adapting to the growing physical impacts from climate change.

- *Healthcare, Banks, Telecoms, and Others Ignoring Climate Change*: Companies in the highest greenhouse gas emitting sectors such as the electric power and oil industries showed the highest quality disclosure, while most companies in sectors with lower emissions, such as healthcare, retailers, and banks, have been largely unresponsive to the financial risks they face from climate change.

- *Responses Inadequate Relative to the Global Framework*: When compared with the Global Framework for Climate Risk Disclosure, S&P 500 companies that responded to the questionnaire provided only about one quarter of the information investors are looking for. Companies provided more information about qualitative measures such as corporate governance than they did about quantitative measures such as emission reduction goals or the impact of regulations that would impose a cost of carbon.

Some companies that have not included any information on climate risks in their SEC filings have responded to requests for voluntary disclosure with substantive information. For example, Friends of the Earth reports that Chevron did not *mention* climate change in its 2005 SEC filings, but responded to a Carbon Disclosure Project survey that year with "a fourfold action plan that is now in its fourth year."[133] Other companies follow this same pattern of leaving climate risks out of SEC filings but responding to specific requests for climate information. While we applaud those companies that participate in voluntary reporting and that respond to information requests on climate risks, these venues by themselves will not meet the market's demand for standardized, transparent information that is freely available to all investors.

Some companies have chosen to include climate risk in voluntary sustainability reports or more general corporate responsibility reports, often filed in response to shareholder activism. These outlets for informal disclosure often include additional information on environmental trends and business strategies. Sustainability reports often have a public relations cast, and are primarily directed towards an audience of environmental interest groups and the general public, rather than investors. These reports more often acknowledge the science of climate change and discuss efforts to build awareness rather than presenting the specific effects of climate change on their performance and operations. A recent study found that "while almost all companies reported on climate change in their sustainability reports, on closer examination companies reported far more on potential opportunities rather than financial risks for their companies from climate change."[134] Moreover, these forms of disclosure have no standardized format or repository to allow investors to make comprehensive, rigorous judgments to support their investment decisions.

Like the cooperative voluntary efforts to standardize the format and content of climate risk disclosure, sustainability reports provide a solid foundation on which the companies can base the disclosures required under the Commission's existing reporting requirements. But in order to provide the information investors require, reporting must be consistent and must support comparisons among companies. The 10-K report is and will remain the gold standard for reporting information to investors, and investors need to know that material information relating

[133] FIFTH SURVEY, *supra* note 127, at 36.
[134] GRI/KPMG STUDY, *supra* note 43, at 5.

to companies' performance and operations will be in those required reports. Given the significance of climate risks for many corporations' financial position and competitive prospects in a new, carbon-constrained environment, reporting on climate issues is no longer a mere virtue, but a legal obligation and a necessity for investors.

6. The Commission Should Clarify Corporate Obligations to Disclose Climate Risk.

a. The Commission Should Issue an Interpretive Release Clarifying the Application of Existing Law to Climate Risks and Setting Forth the Elements of Climate Risk Disclosure.

The Commission has on many occasions issued guidance to explain its disclosure rules, and to ensure that corporate disclosure practices comply with statutory and regulatory standards and take account of new legal and other developments.[135] We join past petitioners who have requested an interpretive release affirming the obligation to disclose material climate-related information.

As described above, the current state of climate risk disclosure is inconsistent and inadequate. There is apparently little consensus among reporting corporations, their auditors and lawyers about what is required in climate disclosures. As a result, investors are being deprived

[135] *See, e.g.*, *supra* Part 2.b (discussing recent releases concerning various matters including MD&A obligations). The Commission has issued numerous releases concerning disclosure of information regarding environmental risks. *See, e.g.*, Management's Discussion and Analysis of Financial Condition and Results of Operations; Certain Investment Company Disclosures, Securities Release No. 6835, Exchange Act Release No. 26,831, Investment Company Act Release No. 16,961, 54 Fed. Reg. 22,427 (May 24, 1989); Environmental Disclosure, Securities Act Release No. 6130 (Sept. 27, 1979); Relating to Environmental Disclosure, Securities Act Release No. 5704, Fed. Sec. L. Rep. (CCH) ¶ 80,495 (May 6, 1976); Disclosures Pertaining to Matters Involving the Environment and Civil Rights, Exchange Act Release No. 9252, 3 Fed. Sec. L. Rep. (CCH) ¶ 23,507 (July 19, 1971); Exchange Act Release No. 10116, 3 Fed. Sec. L. Rep. (CCH) ¶ 23,507 (July 19, 1971); Notice of Commission Conclusions and Final Action on the Rulemaking Proposals Amended in Securities Act Release No. 5627 (Oct. 14, 1975); Holding Company Act Release No. 16224 (Dec. 3, 1968); SEC Staff Accounting Bulletin No. 92, 58 Fed. Reg. 32,843 (1993). In issuing guidance concerning the relationship of environmental issues to disclosure obligations, the Commission has pointed to it own obligations under the National Environmental Policy Act, which requires all federal agencies, "to the fullest extent possible," to interpret and administer federal policies, regulations, and public laws in accordance with the NEPA's environmental protection policies. *See* 42 U.S.C. § 4332 (2000); *see also* Securities Act Release No. 6130 at 2 ("As a matter of policy, in light of its mandate under the National Environmental Policy Act of 1969 to consider environmental values and its mandate under the federal securities laws for investor protection, the Commission 'has issued several releases alerting public companies of their legal obligation to disclose any and all environmental . . . information that would be material to investors or shareholder.'") (quoting SEC Reply Brief, Natural Res. Def. Council v. Sec. & Exch. Comm'n, 389 F. Supp. 689 (D.D.C. 1974)).

of the information critical to their ability to assess firms' preparedness to adjust to the regulatory and physical implications of climate change and to make informed investment decisions. The current disarray in climate disclosures merits Commission action beyond a simple statement that climate risk is, for instance, a known trend or uncertainty that must be addressed in MD&A (although the state of disclosure suggests that even that limited statement would provide some guidance). We urge the Commission to go further and to set forth the elements of disclosure appropriate for those companies that determine that climate risk has a material impact on their performance and operations.

Specifically, we respectfully request the Commission issue an interpretive release clarifying that registrants, in preparing their periodic mandatory public disclosures, must carefully review the implications of climate change for their financial condition and operations, and must disclose climate risks that are material. As in other areas, the nature of the disclosures that are required will depend upon the circumstances. For some registrants, climate risks may qualify as material contingent liabilities that must be disclosed on the balance sheet or in notes to financial statements. In other instances, registrants will be obligated to discuss climate risks in their disclosures under Items 101, 103, or 303 to Regulation S-K, particularly as part of MD&A disclosures.

The growing empirical evidence and understanding of global warming and the rapid growth of greenhouse gas regulation at all levels of government in recent years mean that no registrant—including those in sectors with relatively low direct emissions that are subject to fewer obvious climate-related risks in the short term—can brush climate change aside as, categorically, too remote or uncertain to have material consequences that must be disclosed to investors. Thus, the Commission's guidance should explain that all registrants should review the adequacy of their internal mechanisms for gathering information about, and assessing, climate risk, and should establish institutional mechanisms necessary to ensure careful and well-informed review of potential climate risks. As the Commission has explained, the assessment of materiality requires thorough consideration of all relevant information, whether or not that information itself meets the materiality standard.[136]

[136] Interpretation: Commission Guidance Regarding Management's Discussion and Analysis of Financial Condition and Results of Operations, Securities Act Release No. 8350, Exchange Act Release No. 48,960, 68 Fed. Reg. 75,056 (Dec. 29, 2003).

To identify and evaluate climate risks related to greenhouse gas regulation, a registrant must be informed about the magnitude of its greenhouse gas emissions. Registrants will therefore need, as part of their examination of potentially material climate risks, to determine the current and projected greenhouse gas emissions associated with their facilities and operations. Because one of the ways in which greenhouse gas regulation may affect a firm is by increasing costs of purchases or distribution, registrants should review greenhouse gas emissions associated with their entire production cycle. Registrants should also review the requirements of any international, national, state, or local greenhouse gas regulations that are in place, or probable, in the jurisdictions in which the operate, and assess the impact of those regulations, in light of their greenhouse gas emissions, upon their financial condition and operations. An understanding both of current and projected greenhouse gas emissions levels, and of present and probable regulations concerning greenhouse emissions, is a necessary prerequisite for the registrant to determine whether it faces "material opportunities, challenges and risks" relating to climate change, and to inform the analysis in its disclosures.

The Commission should clarify that, after performing a close and well-informed review of the full range of relevant information concerning potential climate risks, registrants must disclose any such risks that are found to be material, including:

- Physical risks associated with climate change;
- Financial risks and opportunities associated with present or probable greenhouse gas regulation; and
- Legal proceedings relating to climate change.

The guidance we propose is similar in form to guidance the Commission and its staff have previously provided concerning various issues relating to required disclosures under the securities laws and regulations. It is vitally important, in light of the inadequate state of climate disclosure to date and the recent developments underlining the importance of climate risk for many companies, that the Commission clarify for registrants that climate risk demands the same careful attention given to other forms of risk. Further discussion of the guidance we request is set forth in Appendix G.

b. Complying with Climate Risk Disclosure Requirements Will Not Be Unduly Burdensome.

Requiring companies to disclose climate-related information in their mandatory reports in accordance with long-settled legal principles will not impose an undue burden. The inherent flexibility of the Commission's disclosure regulations and the materiality standard allows firms to tailor disclosure to their particular circumstances. As Commission Staff has stated, "[c]ompanies must determine, based on their own particular facts and circumstances, whether disclosure of a particular matter is required in MD&A."[137]

Disclosure of climate risks requires, as a first step, assembling the relevant information—including current and projected emissions levels, applicable regulatory requirements, and information about climate-related physical and market risks that may affect the company—and a careful review of the implications of that information for the company's operations and financial condition.

Tabulating the company's greenhouse gas emissions is a straightforward exercise that is an indispensable preliminary step toward a meaningful assessment of whether climate change poses risks to a corporation.[138] The Greenhouse Gas Protocol, a peer-reviewed mechanism developed by the World Business Council for Sustainable Development and the World Resources Institute, with input from hundreds of experts from business, government, and accounting, contains detailed procedures for calculating a company's greenhouse emissions.[139] This protocol has been adopted by the International Standards Organization and used by hundreds of companies and industry groups to measure their greenhouse gas emissions.[140]

Several states already require that some companies calculate and report their greenhouse gas emissions or have passed laws that will impose such requirements on various sources of

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[137] *Id.*

[138] *See* Lash & Wellington, *supra* note 37, at 101-02 (noting that calculating firm's GHG emissions is a "quantitative and relatively straightforward task"); Inho Choi, *Global Climate Change and the Use of Economic Approaches: The Ideal Design Features of Domestic Greenhouse Gas Emissions Trading with an Analysis of the European Union's CO_2 Emissions Trading Directive and the Climate Stewardship Act*, 45 NAT. RES. J. 865, 904 (2005) (noting absence of technical or cost impediments to monitoring carbon emissions).

[139] *See* GHG Protocol Initiative, Corporate Standard, http://www.ghgprotocol.org.

[140] Some trade associations, including the International Aluminum Institute and the International Council of Forest and Paper Associations, have used the Protocol to develop industry-specific calculation tools.

greenhouse gas emissions within their borders.[141] Thirty-five states have joined the Climate Registry and committed to encourage emissions sources within their boundaries to report and verify their greenhouse gas emissions to the registry.[142] Under the acid rain program created by the Clean Air Act Amendments of 1990, owners and operators of electrical generating units above 25 megawatts are already required to collect and report to the Environmental Protection Agency carbon dioxide emissions data.[143] Tabulation and reporting of greenhouse gas emissions will invariably be required under any federal greenhouse gas legislation. The high percentage of companies that already calculate their greenhouse gas emissions demonstrates that this is an entirely feasible and not burdensome task for corporations to undertake. According to the Carbon Disclosure Project, 73 percent of the 360 companies in the FT500 that responded to the CDP survey reported that they already disclose their greenhouse gas emissions in some forum.[144] As noted, registrants must have this basic information concerning current and projected greenhouse gas emissions in order to assess their risks and opportunities in the new physical and legal climate.

Assessment of whether the registrant faces material risks requiring public disclosure does not impose any legal obligations beyond those long required under the securities laws and the Commission's regulations and guidance. The assessment of materiality of climate related risks is the same process that registrants have undertaken with respect to other risks. These are risks that responsible managers would surely examine even in the absence of regulatory requirements: potential physical threats to assets and regulatory and market developments that are likely to have material effects on the company's financial condition and operations.

Climate risk is in this way no different from other known trends and uncertainties that the Commission requires companies to address, as set forth in past interpretive releases and the precedents discussed above in Section 2: "[A] disclosure duty exists where a trend, demand, commitment, event or uncertainty is both presently known to management and reasonably likely

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[141] *See* Appendix B.
[142] *See* The Climate Registry, Principles and Goals, http://www.theclimateregistry.org/principlesgoals.html.
[143] *See* 40 C.F.R. § 75.10 (2007).
[144] CARBON DISCLOSURE PROJECT, CARBON DISCLOSURE REPORT 2006: GLOBAL FT500 at 6 (2006), *available at* http://www.ethosfund.ch/upload/publication/p169e_060930_Carbon_disclosure_Project_Report_Global_FT.pdf; *see also* CARBON DISCLOSURE PROJECT, *supra* note 62.

to have material effects on the registrant's financial condition or results of operation."[145] The fact that some companies have been disclosing climate risk in their SEC filings, in voluntary survey responses, and in sustainability reports, demonstrates that climate disclosure is not beyond the reach of registrants.

c. The Commission Should Provide the Requested Guidance Promptly.

For investors, this moment in the economy's response to climate change is critical. Policies and practices companies adopt, and strategic business decisions they make now, will greatly affect their position as greenhouse gas regulations and the physical impacts of climate change become more pervasive. Companies that take steps now to minimize climate risk and exploit new opportunities afforded by climate change will be far better positioned than those that are slow coming to terms with climate issues. As with other major new developments with broad impacts for the entire business world—such as the transformation in information technology or rising health care costs—investors need to identify firms that are leading and those that are trailing their competitors. Inconsistent and incomplete disclosure of climate risk prevents investors from fully evaluating and comparing among investments. Every earnings season that passes without consistent disclosure of climate risk harms investors.

As explained above, the relief we seek consists of clarification of existing regulatory standards rather than new substantive law. Such clarification could consist simply of a clear affirmation that (1) in light of recent developments, registrants must give close and well informed attention to potential climate risks that may affect them, and (2) registrants must, consistent with established law, disclose material information relating to the impacts of climate change and greenhouse gas regulation upon their financial condition and operations. We believe that the guidance we seek, and the prompt action we call for, would not entail an undue burden for the Commission or its staff, particularly when measured against the large benefits this guidance would have for investors and markets in need of information on climate risk.

[145] Management's Discussion and Analysis of Financial Condition and Results of Operations; Certain Investment Company Disclosures, Securities Release No. 6835, Exchange Act Release No. 26,831, Investment Company Act Release No. 16,961, 54 Fed. Reg. 22,427 (May 24, 1989).

Respectfully submitted,

California Public Employees' Retirement System

John Chiang
California State Controller

California State Teachers' Retirement System

Bill Lockyer
California State Treasurer

Mindy Lubber
President
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Counsel for Ceres
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Fred Krupp
President
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Sean H. Donahue
Nancy Spencer
Vickie Patton

Karina Litvack
Director, Head of Governance & Sustainable Investment
F&C Management

Alex Sink
Chief Financial Officer
State of Florida

Michelle Chan-Fishel
Friends of the Earth

Jonathan Miller
Kentucky State Treasurer

David G. Lemoine
Maine State Treasurer

Nancy K. Kopp
Maryland State Treasurer

Lance E. Lindblom
President, CEO & Trustee
The Nathan Cummings Foundation

Orin Kramer
Chair
New Jersey State Investment Council

William C. Thompson, Jr.
New York City Comptroller

Andrew M. Cuomo
Attorney General
State of New York

Thomas P. DiNapoli
New York State Comptroller
New York State Common Retirement Fund

Richard Moore
Treasurer
State of North Carolina

Randall Edwards
Treasurer
State of Oregon

Julie Gorte
Senior Vice President for Sustainable Investing
Pax World Management Corporation

Frank T. Caprio
General Treasurer
State of Rhode Island

Jeb Spaulding
Treasurer
State of Vermont

DATE: September 18, 2007

PETITION SIGNATORIES

California State Controller, John Chiang

The Controller serves as the independent Chief Fiscal Officer of California, the eighth largest economy in the world. As the state's fiscal watchdog, the Controller provides sound fiscal control over more than $100 billion in annual receipts and disbursements of public funds, uses audit authority to uncover fraud and abuse of taxpayer dollars, and provides fiscal guidance to local governments. The Controller presides over the Franchise Tax Board, and is a trustee of the California Public Employees' Retirement System (CalPERS) Board and the California State Teachers' Retirement System (CalSTRS) Board, the nation's first and second largest public pension funds with a combined portfolio of $400 billion. The Controller serves on a total of 76 state boards and commissions that significantly impact the state's economic health in areas such as development, employment, housing and the environment.

California Public Employees' Retirement System

CalPERS is the nation's largest public pension fund with more than $245 billion in assets. It provides retirement and health benefits to approximately 1.5 million California State, local agency and schools employees and their families. For more about CalPERS, visit www.calpers.ca.gov.

California State Teachers' Retirement System

With a $170 billion investment portfolio, the California State Teachers' Retirement System is the second-largest public pension fund in the United States. It administers retirement, disability and survivor benefits for California's 795,000 public school educators and their families from the state's 1,400 school districts, county offices of education and community college districts.

California State Treasurer, Bill Lockyer

The Treasurer serves on the boards of the California Public Employees' Retirement System (CalPERS) and the California State Teachers' Retirement System (CalSTRS). With more than $390 billion in combined assets, CalPERS and CalSTRS rank among the world's

largest institutional investors. As such, they hold substantial stakes in the U.S. and global economies, and in the risk profiles of the corporations in which they invest. As a member of both funds' governing boards, the Treasurer shares their interests. The Treasurer's Office also manages the State's Pooled Money Investment Account (PMIA), which has $65.6 billion in taxpayer funds on hand at the end of June 2007. The PMIA invests monies on behalf of state government and more than 2,606 local jurisdictions. Additionally, the Treasurer chairs the governing board of California's 529 college savings plan, called ScholarShare. Currently, ScholarShare has a portfolio of 190,000 accounts and $2.6 billion in assets.

Ceres

Founded in 1989, Ceres is a leading network of investors, environmental groups and other public interest organizations working with companies to address sustainability challenges. Ceres also directs the Investor Network on Climate Risk, comprised of more than 50 institutional investors who collectively manage $4 trillion in assets.

Environmental Defense

Environmental Defense is a leading national nonprofit organization representing more than 500,000 members. Since 1967, we have linked science, economics and law to create innovative, equitable and cost-effective solutions to society's most urgent environmental problems. Environmental Defense is dedicated to protecting the environmental rights of all people, including future generations. Among these rights are access to clean air and water, healthy and nourishing food, and a flourishing ecosystem. Guided by science, Environmental Defense evaluates environmental problems and works to create and advocate solutions that win lasting political, economic and social support because they are nonpartisan, cost-efficient and fair. Environmental Defense is committed to achieving climate stabilization.

F&C Management

F&C Management is a United Kingdom-based active manager with just over $200 billion in assets under management (as of June 30, 2007). With headquarters in London, F&C has substantial holdings in US corporations. In addition, F&C has a Boston office from which it directs all proxy voting and corporate governance activity for its US holdings. As part of its

standard investment process, F&C has a team of analysts that actively considers the risks and opportunities that companies face from climate change and other environmental and social issues that are material to long-term shareholder value.

Florida Chief Financial Officer, Alex Sink

Elected in November 2006, Chief Financial Officer Alex Sink is responsible for monitoring the state's fiscal health and manages more than $74 billion in tax revenue coming in and out of state government annually. The former President of the Bank of America for Florida, Sink's professional experience and community service have molded her into a champion for fiscal responsibility and accountability. CFO Sink administers the Department of Financial Services, which assists hundreds of thousands of consumers annually with financial service issues, including banking, securities and insurance. As the Chief Financial Officer, Sink serves as a member of the Florida Cabinet, which oversees insurance and banking regulation, the management and acquisition of state lands and 14 state agencies. A member of INCR since early 2007, CFO Sink is also one of three members of the Board of Trustees who directs the State Board of Administration. The SBA manages 30 investment funds, comprising over $184 billion in assets.

Friends of the Earth

Friends of the Earth is the U.S. voice of an influential, international network of grassroots groups in 70 countries. Founded in San Francisco in 1969 by David Brower, Friends of the Earth has for decades been at the forefront of high-profile efforts to create a more healthy, just world. Our members were the founders of what is now the world's largest federation of democratically elected environmental groups, Friends of the Earth International. Friends of the Earth is a leading expert on the issue of climate risk reporting in SEC filings, having produced five studies on the topic from 2001-2006.

Kentucky State Treasurer, Jonathan Miller

The Kentucky Treasurer's Office was created in 1792 in the state's Constitution. The Treasury Office is responsible for acting in the best interest of taxpayers and investing in the future of the state. The Treasury Office records, monitors and reconciles all transactions in the

state's depository and checking accounts, assists constituents in locating unclaimed property, makes deposits of incoming revenues, and records, verifies, and pays all federal, state and local withholding taxes for employees of the Commonwealth.

Maine State Treasurer, David G. Lemoine

The Treasurer manages cash and debt for the State of Maine, forecasts revenues for cash pool interest income, and manages the State's Unclaimed Property program. The Treasurer also provides investment oversight for NextGen, Maine's College Investing Plan and serves on the boards of the Maine Municipal Bond Bank, Maine State Housing Authority, Maine State Retirement System, Finance Authority of Maine, Adaptive Equipment Loan Program, Maine Health and Higher Education Facilities Authority, Maine Governmental Facilities Authority, Northern Maine Transmission Corporation, Maine Education Loan Authority, the Maine Public Utility Financing Bank, and the Lifelong Learning Accounts Board.

Maryland State Treasurer, Nancy K. Kopp

The State Treasurer is responsible for the management and protection of State funds and property. In this capacity, the Treasurer selects and manages the depository facilities for State funds, issues or authorizes agents to issue payments of State funds, invests excess funds, safekeeps all State securities and investments, and provides insurance protection against sudden and unanticipated damage to State property or liability of State employees. The State Treasurer plans, prepares, and advertises State of Maryland General Obligation bond issues and, through the Capital Debt Affordability Committee, reviews on a continuing basis the size and condition of State tax-supported debt and other debt of State units. The State Treasurer annually reviews the total amount of State debt that prudently may be authorized for the next fiscal year.

The Nathan Cummings Foundation

The Nathan Cummings Foundation is a private grant-making foundation committed to democratic values and the creation of a socially and economically just society. Through its endowment, currently valued at approximately $550 million, the Foundation holds shares in a broad swath of American corporations. NCF believes that the way in which these corporations approach major public policy issues can have important implications for long-term shareholder

value. The Foundation actively votes its proxies and, over the last five years, has successfully used non-binding shareholder resolutions to focus corporate attention on a number of environmental and social issues.

New Jersey State Investment Council, Orin Kramer, Chair

New Jersey's Division of Investment is one of the 10 largest public pension funds in the nation, with pension assets of $80 billion, invested to provide retirement benefits for more than 700,000 current and future retirees from public sectors across the state. The New Jersey Investment Council is the 13-member board charged with oversight and establishing policies and procedures for the Division of Investment.

New York City Comptroller, William C. Thompson, Jr.

The New York City Comptroller, an independently elected official, is the Chief Financial Officer of the City of New York; the investment adviser to the five New York City pension funds, with collective assets of $111 billion; and a trustee of four of the five funds. The mission of the office includes ensuring the financial health of New York City by advising the Mayor, the City Council, and the public of the City's financial condition. The Comptroller also makes recommendations on City programs and operations, fiscal policies, and financial transactions; performs budgetary analysis; audits City agencies; registers proposed contracts; oversees budget authorization; determines credit needs, terms, and conditions; prepares warrants for payment; and issues and sells City obligations.

New York State Attorney General, Andrew M. Cuomo

The New York State Attorney General is the State’s chief law officer and is charged with enforcing environmental, investor protection, consumer, and other laws to protect the health and safety of New York’s citizens, the environment they live in, and the economy of the State that contains the world’s most important financial center. To carry out these responsibilities, the Attorney General conducts investigations, litigates in various courts and before regulatory and administrative agencies, and participates in rulemaking proceedings before governmental agencies.

New York State Comptroller and New York State Common Retirement Fund, Thomas P. DiNapoli

The New York State Comptroller is the sole Trustee of the New York State Common Retirement Fund ("Fund") serving over 1 million pensioners, beneficiaries and their families. The Comptroller is responsible for managing, preserving and growing the Fund and does so by investing in a number of asset classes to maximize returns, including bonds and stocks of publicly traded companies. The Fund's investment portfolio has assets totaling $154 billion making it the third largest public pension fund in the United States.

North Carolina State Treasurer, Richard Moore

Now in his second term as State Treasurer, Richard Moore is sole fiduciary for more than $75 billion in public monies and state investments, oversees the pension funds for more than 780,000 public sector employees, and manages the debt of state and local governments. The Wall Street Journal and credit-rating agency Standard & Poor's recently named North Carolina as having the second-best funded public pension system in the United States, a testament to Moore's responsible management. In 2004, he was honored as a Top Public Official of the Year by Governing Magazine for his national leadership and guidance of the state's pension fund. The Treasurer also serves on many boards and commissions, including the State Banking Commission, which he chairs, and the state boards of Education and Community Colleges.

Oregon State Treasurer, Randall Edwards

The Office of the Oregon State Treasurer is a highly sophisticated organization with a wide range of financial responsibilities, including managing the investment of state funds, issuing all state bonds, serving as the central bank for state agencies, and administering the Oregon 529 College Savings Network. The Oregon State Treasurer's Office is managed like a business, striving to save taxpayers money and earn the highest possible return on investments. State Treasurer Randall Edwards is a constitutional officer and a statewide elected official. He serves as the chief financial officer for the State and is responsible for the prudent financial management of more than $79 billion. Edwards, who took office in January 2001, is serving his second four-year term; the office is limited to two terms.

Pax World Management Corporation

Pax World, based in Portsmouth, New Hampshire, seek to invest in forward-thinking companies with sustainable business models. To identify those companies, Pax combines rigorous financial analysis with equally rigorous environmental, social and governance analysis. The result, it believes, is an increased level of scrutiny that helps it identify better-managed companies that are leaders in their industries; that meet positive standards of corporate responsibility; and that focus on the long term. Pax World avoids investing in companies that are significantly involved in the manufacture of weapons or weapons-related products, manufacture tobacco products, are involved in gambling as a main line of business, or engage in unethical business practices. Pax World's primary goal is to produce competitive returns for its investors. By integrating environmental, social and governance criteria - what it calls "sustainability" criteria - into its investment approach, the funds also seek to promote peace, protect the environment, advance equality and foster sustainable development.

Rhode Island General Treasurer, Frank T. Caprio

The General Treasurer receives and disburses all state funds, issues general obligation notes and bonds, manages the investment of state funds and oversees the retirement system for state employees, teachers and some municipal employees. He is also responsible for the management of the Unclaimed Property Division, the Crime Victim Compensation Program and the state-sponsored 529 college savings plan, the CollegeBoundfund.

Vermont State Treasurer, Jeb Spaulding

The Vermont State Treasurer's Office is responsible for the State's cash management and banking functions, investment of short-term and trust funds, bond issuance and debt management, administration of three public retirement systems and pension funds, operation of the State's unclaimed property program, and improving the financial literacy of Vermonters. In addition, the State Treasurer serves *ex-officio* on a variety of boards for quasi-public agencies and authorities, and also advises State policymakers on fiscal and economic issues.

THE SCIENCE OF CLIMATE CHANGE

The Basics of Climate Change Science

Climate change refers to a long-term rise in global average temperature. More specifically, it refers to the ongoing rise in temperature that started a century ago and is believed to be caused mainly by greenhouse gas pollution. 'Greenhouse gases' trap heat from the sun at the Earth's surface. Human activities are rapidly increasing the amount of greenhouse gases in the atmosphere, causing more heat to be trapped and increasing global temperatures. Rising temperatures have already resulted in an increase in extreme weather events, loss of sea ice and glaciers, rising sea level, and harm to wildlife. But it is not too late to avoid the most severe consequences of climate change: a sharp reduction of greenhouse gas pollution would significantly slow global warming and reduce the likelihood of dangerous and irreversible impacts.

Scientific Consensus on the Impacts of Climate Change

The recently released Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report, a comprehensive review of the state-of-the-knowledge on climate change, highlights the overwhelming scientific consensus that human activities are contributing to changes in the climate system. This report reinforces the conclusions outlined in existing consensus statements by respected scientific organizations, such as the statement on climate change from 11 different national scientific academies, including the United States,[146] the official position statement by the American Geophysical Union,[147] and the official position statement by the American Meteorological Society.[148]

[146] *See* Joint Science Academies' Statement: Global Response to Climate Change (June 2005), *available at* http://www.royalsoc.ac.uk/displaypagedoc.asp?id=20742.
[147] Position Statement, American Geophysical Union Council, Human Impacts on Climate (Dec. 2003), *available at* http://www.agu.org/sci_soc/policy/positions/climate_change.shtml.
[148] Information Statement, American Meteorological Soc'y, Climate Change (Feb. 1, 2007), *available at* http://www.ametsoc.org/POLICY/2007climatechange.html.

The IPCC's Summaries for Policymakers from each of its three working groups outline the scientific aspects of climate change, the ongoing and predicted impacts, and opportunities for mitigation and adaptation. These summaries state that:

- "Warming of the climate system is unequivocal, as is now evident from observation of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level."[149]

- "Most of the observed increase in global average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic [human-produced] greenhouse gas concentrations."[150]

- "At continental, regional, and ocean basin scales, numerous long-term changes in climate have been observed. These include changes in arctic temperatures and ice, widespread changes in precipitation amounts, ocean salinity, wind patterns and aspects of extreme weather including droughts, heavy precipitation, heat waves and the intensity of tropical cyclones."[151]

- "Impacts of climate change will vary regionally but, aggregated and discounted to the present, they are *very likely* to impose net annual costs which will increase over time as global temperatures increase."[152]

- "The most vulnerable industries, settlements and societies are generally those in coastal river flood plains, those whose economies are closely linked with climate-sensitive

[149] INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Summary for Policymakers*, *in* CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS 5 (2007), *available at* http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_SPM.pdf.
[150] *Id*. at 10. According to the Summary for Policymakers: "…the following terms have been used to indicate the assessed likelihood, using expert judgment, of an outcome or result…*Very likely* >90%, *Likely* >66%." *Id*. at 3 n.6.
[151] *Id*. at 7.
[152] INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Summary for Policymakers*, *in* CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY 17 (2007), *available at* http://www.ipcc-wg2.org/index.html.

resources, and those in areas prone to extreme weather events, especially where rapid urbanization is occurring."[153]

- "Both bottom-up and top-down studies indicate that there is substantial economic potential for the mitigation of global GHG emissions over the coming decades, that could offset the projected growth of global emissions or reduce emissions below current levels."[154]

The IPCC is "the leading body for the assessment of climate change, established by the United Nations to provide the world with a clear, balanced view of the present state of understanding of climate change."[155] IPCC reports are written by teams of authors nominated by governments and international organizations. Over 800 contributing authors and 450 lead authors were involved in the writing of the Fourth Assessment, and more than 2,500 scientific expert reviewers were involved in the review process. Each Summary for Policymakers is approved line by line by relevant experts and government officials.[156]

Other resources

In addition to the attached IPCC reports, excellent and accessible summaries of the science of climate change can be found from the following resources:

- NASA's Earth Observatory website on Global Warming gives a basic overview of climate change science and findings: http://earthobservatory.nasa.gov/Library/GlobalWarmingUpdate/

- The National Center for Atmospheric Research maintains a website that explains the basics of weather and climate science: http://www.eo.ucar.edu/basics/index.html

[153] *Id*. at 12.
[154] INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Summary for Policymakers*, *in* CLIMATE CHANGE 2007: MITIGATION 9 (2007), *available at* http://arch.rivm.nl/env/int/ipcc/.
[155] Fact Sheet, Intergovernmental Panel on Climate Change, http://www.ipcc.ch/press/factsheet.htm.
[156] *Id.*

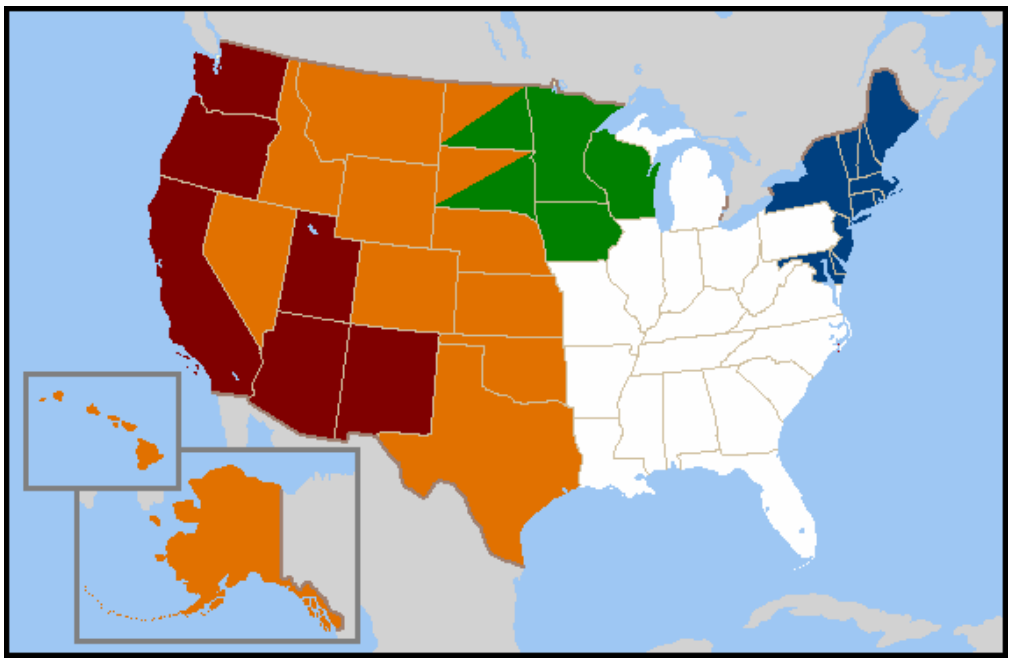
- The IPCC has published a pdf of Frequently Asked Questions that cover a number of climate science topics: http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Pub_FAQs.pdf

- Spencer R. Weart's Discovery of Global Warming materials, published by the of the American Institute of Physics, give a thorough history of climate change research and science: http://www.aip.org/history/climate/

REGIONAL AND STATE REGULATORY ACTIONS CONCERNING GREENHOUSE GAS EMISSIONS

This appendix illustrates the extensive geographic and programmatic diversity of state actions to reduce greenhouse gas emissions and the considerable reach of regulatory actions that currently affect business and investment decisions. It is by no means an exhaustive list of state-level climate change policies or programs.

Regional Initiatives



Regional Greenhouse Gas Initiative [≈ 18.9% U.S. GDP; 16.4% U.S. population]

Western Climate Initiative [≈ 19.6% U.S. GDP; 18.6% U.S. pop]

\+ WGA Clean and Diversified Energy Initiative [≈ 34.7% U.S. GDP; 33.2% pop]

Powering the Plains [≈ 4.9% U.S. GDP; 5.1% U.S. population][157]

[157] GDP figures derived from News Release, Bureau of Economic Analysis, Gross Domestic Product (GDP) by State, 2006 (June 7, 2007), *available at* http://www.bea.gov/newsreleases/regional/gdp_state/gsp_newsrelease.htm; population figures derived from U.S. CENSUS BUREAU, U.S. CENSUS 2000 tbl.2 (2000), *available at* http://www.census.gov/population/www/cen2000/respop.html.

Regional Greenhouse Gas Initiative (RGGI): A consortium of nine states working toward the implementation of a cap-and-trade program aimed at reducing the CO_2 emissions form Northeastern power plants (it may be extended to cover other emissions sources in the future).[158] The first mandatory compliance period, which requires annual emissions reporting, begins in 2009; a full evaluation of power plant performance is to be done in 2012.[159] Compliance with the emissions cap set by the initiative will be enforced by the state environmental agencies.[160] Participants in RGGI currently include Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, and Vermont.[161] The District of Columbia, Massachusetts, Pennsylvania, Rhode Island, the Eastern Canadian Provinces, and New Brunswick are observers in the process.

Western Climate Initiative (WCI): A collaboration between western states and provinces (established in February, 2007) to set regional greenhouse gas emissions goals, develop a multi-sector market-based mechanism to support targeted emissions reductions, and participate in a greenhouse gas emissions registry to enable tracking, management, and crediting to reduce greenhouse gas emissions. The initiative has an aggregate emissions reduction goal of 15% below 2005 levels by 2020.[162] Members of WCI also either have adopted or are committed to adopting clean tailpipe standards for the regulation of automobile emissions.[163] Arizona, California, New Mexico, Oregon, Utah, Washington, and the Canadian provinces of British Columbia and Manitoba are members of the Initiative.[164] Colorado, Kansas, Nevada, and

[158] Regional Greenhouse Gas Initiative (RGGI), About RGGI, http://www.rggi.org/about.htm.
[159] REGIONAL GREENHOUSE GAS INITIATIVE, RGGI OVERVIEW (Dec. 20, 2005), *available at* http://www.rggi.org/agreement.htm.
[160] REGIONAL GREENHOUSE GAS INITIATIVE, FREQUENTLY ASKED QUESTIONS (Dec. 20, 2005), *available at* http://www.rggi.org/agreement.htm.
[161] REGIONAL GREENHOUSE GAS INITIATIVE, MEMORANDUM OF UNDERSTANDING (Dec. 20, 2005), *available at* http://www.rggi.org/agreement.htm; REGIONAL GREENHOUSE GAS INITIATIVE, SECOND AMENDMENT TO MEMORANDUM OF UNDERSTANDING (Apr. 20, 2007), *available at* http://www.rggi.org/agreement.htm.
[162] Western Climate Initiative, Statement of Regional Goal (Aug. 22, 2007), *available at* http://www.westernclimateinitiative.org/WCI_Documents.cfm.
[163] Western Regional Climate Action Initiative (Feb. 26, 2007), *available at* http://www.governor.wa.gov/news/2007-02-26_WesternClimateAgreementFinal.pdf; U.S. Dep't of Energy, Office of Energy Efficiency and Renewable Energy, Utah Joins Western Climate Initiative (May 22, 2007), http://www.eere.energy.gov/states/news_detail.cfm/news_id=10987.
[164] Western Climate Initiative, http://www.westernclimateinitiative.org/.

Wyoming are currently participating as observers in the WCI, as well as the Canadian provinces of Ontario, Saskatchewan, and Quebec, and the Mexican state of Sonora.[165]

Other Regional Initiatives*:* Several other regional initiatives help coordinate the greenhouse gas emissions reduction efforts of multiple states. Some of these are listed here:

- *Powering the Plains*: A roadmap and policy directive aimed at enabling states of the upper Midwest to transition to a carbon-neutral energy infrastructure by 2055. Primarily involves Iowa, Manitoba, Minnesota, North Dakota, South Dakota, and Wisconsin.[166]

- *Western Governors' Association Clean and Diversified Energy Initiative*: The Western Governor's Association initiative to support expansive development of energy efficiency, renewable energy resources, and advanced coal systems, including the management and reporting of progress toward outlined goals.[167]

- *U.S. Mayors Climate Protection Agreement*: An agreement between municipalities to reduce carbon emissions and support energy conservation and efficiency programs. Currently participating are over 530 mayors from all 50 states and the District of Columbia, representing more than 66 million people.[168]

Mandatory State Statutes and Regulations Regarding Greenhouse Gas Emissions

California's Global Warming Solutions Act of 2006 (AB 32):[169] The primary purposes of the bill are two-fold: (1) to establish a statewide greenhouse gas emissions cap of 1990 levels by 2020, and (2) to require the development of mandatory emissions reporting rules—to be implemented by January 1, 2008—in order to facilitate the management of emissions reduction

[165] Press Release, Western Climate Initiative, Western Climate Initiative Members Set Regional Target to Reduce Greenhouse Gas Emissions (Aug. 22, 2007).
[166] POWERING THE PLAINS, INTRODUCTION (undated), available at http://www.gpisd.net/ptp/documents/Overview.pdf.
[167] Western Governors' Association, Policy Resolution 06-10 (June 11, 2006), *available at* http://www.westgov.org/wga/policy/06/clean-energy.pdf.
[168] Seattle Mayor Nickels, U.S. Mayors Climate Protection Agreement, http://www.seattle.gov/mayor/climate/.
[169] Text of the Act is available from the California Air Resources Board, http://www.arb.ca.gov/cc/cc.htm.

programs, including market-based mechanisms. Any mechanisms employed in order to reduce emissions are to be consistent and able to be integrated with other state or regional initiatives. This means, among other things, that the cap-and-trade system that is developed under AB 32 and by Executive Order of the governor must be able to be tied to the RGGI trading system.

Hawaii's Statewide Greenhouse Gas Emissions Cap (H.B. 226, 2007). This law establishes a statewide cap on greenhouse gas emission providing that the emissions be reduced to 1990 levels or lower by 2020 and providing for implementing regulatory authority to achieve the goal.

New Jersey's Global Warming Response Act (A3301/S2114, *signed into law* July 6, 2007): Sets statewide emissions caps on greenhouse gases at 1990 levels by 2020 and 80% below that by 2050. The Act requires New Jersey's Department of Environmental Protection to establish greenhouse gas emissions inventories, prioritize sources for greenhouse gas emissions reductions, and adopt rules and regulations to achieve those reductions.

Power Sector Regulation: Several states have policies to reduce greenhouse gas emissions from the power sector. A few examples follow:

- *California*: SB 1368, signed into law on September 29, 2006, codified rulemaking processes under way in California to establish a greenhouse gas emissions performance standard for electric generating units at a rate that is no higher than the rate of emissions of greenhouse gases for combined-cycle natural gas baseload generation. Regulatory agencies implementing this law have recently established a limit of 1100 pounds of carbon dioxide per MW-hour. The standard applies to any long-term contract for baseload power of five years or more. Carbon dioxide injected in geologic formations so as to prevent the release into the atmosphere shall not be counted as emissions of the power plant and thus does constitute emissions reductions in determining compliance with the standard. These rules took effect February 1, 2007 for investment-owned utilities and very recently for municipal utilities.

- *Washington*: S.B. 6001, signed into law on May 3, 2007, enacts an emissions performance standard for baseload generation similar to California's S.B. 1368. Under the standard, all baseload generation for which utilities enter into long-term contracts must meet a greenhouse gas emissions standard of 1,100 pounds CO_2 per megawatt-hour, beginning on July 1, 2008.

- *Montana*: H.B. 25 creates a CO_2 emissions performance standard for electric generating units constructed after January 1, 2007. H.B. 25 prohibits the state Public Utility Commission from approving electric generating units primarily fueled by coal unless a minimum of 50% of the CO2 produced by the facility is captured and sequestered.

- *Iowa*: The electrical utility permit process includes quantifying potential greenhouse gas emissions [S.F. 485, 82d Gen. Ass'bly, 1st Sess. (2007) (enacted)].

- *Massachusetts*: Newly established emissions performance standard for the state's power plants [310 MASS. CODE REGS. 7.29 (2007)]

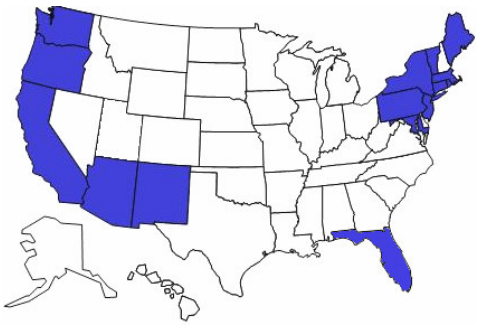
States also provide for greenhouse gas emissions reductions in the power sector through other means, such as the following:

- *Public Benefit Funds*: Nearly half of states manage funds collected through utility contributions or electrical bill charges that support renewable energy or energy efficiency development and implementation.[170]

- *Net Metering Programs*: Net metering provisions charge electricity consumers for the difference between on-site generation and offsite consumption from the grid. All but nine states have some form of net metering program, and 21 have statewide net metering.[171]

[170] Pew Ctr. on Global Climate Change, States with Public Benefit Funds, http://www.pewclimate.org/what_s_being_done/in_the_states/public_benefit_funds.cfm.
[171] Pew Ctr. on Global Climate Change, States with Net Metering Programs, http://www.pewclimate.org/what_s_being_done/in_the_states/net_metering_map.cfm.

State Greenhouse Gas Emissions Standards for Motor Vehicles:[172]



California adopted AB 1493 (Pavley) in 2002, directing the California Air Resources Board (CARB) to "develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles" (Sec. 3).[173] CARB promulgated rules pursuant to this directive in 2004. Since then, 14 states have moved to adopt California's motor vehicle greenhouse gas emission regulations (colored here in blue): Arizona, Connecticut, Florida, Maine, Maryland, Massachusetts, New Jersey, New Mexico, New York, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington.[174] Collectively, these states and California account for over 40% of the U.S. GDP,[175] and 40% of the U.S. population.[176]

Mandatory Emissions Reporting:

- *Iowa* – passed legislation requiring mandatory greenhouse gas reporting and inventory which will be voluntarily tied to a greenhouse gas registry [S.F. 485, 82d Gen. Ass'bly, 1st Sess. (2007) (enacted)]

- *Maine* – Rules are currently in development that would append greenhouse gas emissions to required reporting under Chapter 137, the state's Emissions Statements provisions.

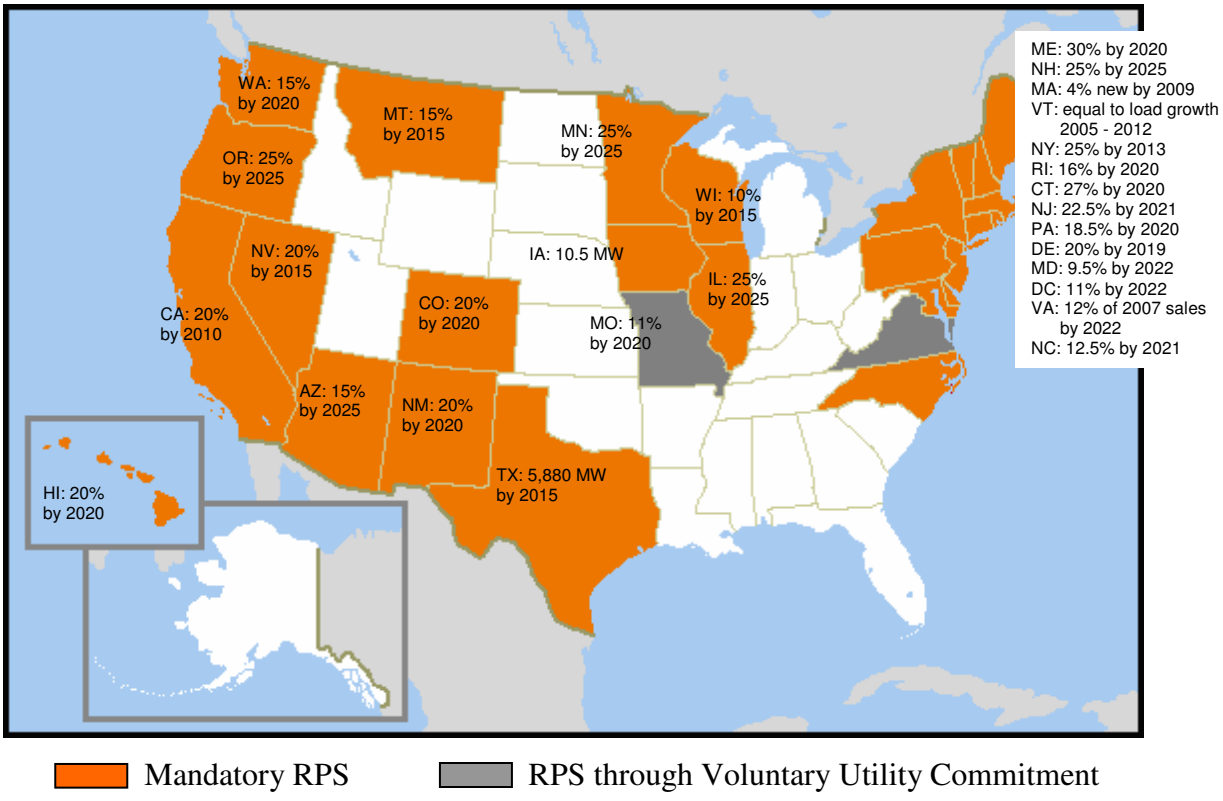
[172] Section adapted from Pew Ctr. on Global Climate Change, States Poised to Adopt California Vehicle GHG Standards, http://www.pewclimate.org/what_s_being_done/in_the_states/vehicle_ghg_standard.cfm.
[173] The text of the bill is available from the California Air Resources Board, http://www.arb.ca.gov/cc/ab1493.pdf.
[174] CONG. RESEARCH SERV., CALIFORNIA'S WAIVER REQUEST TO CONTROL GREENHOUSE GASES UNDER THE CLEAN AIR ACT 6 (Aug. 20, 2007).
[175] Derived from News Release, Bureau of Economic Analysis, Gross Domestic Product (GDP) by State, 2006 (June 7, 2007), *available at* http://www.bea.gov/newsreleases/regional/gdp_state/gsp_newsrelease.htm; *see also* CONG. RESEARCH SERV., *supra* note 174, at 6.
[176] Derived from U.S. CENSUS BUREAU, U.S. CENSUS 2000 tbl.2 (2000), *available at* http://www.census.gov/population/www/cen2000/respop.html.

- *New Jersey* – The New Jersey Division of Air Quality expanded its Emissions Statement Program in 2003 to require reporting of CO_2 and methane from stationary emissions sources [http://www.nj.gov/dep/aqm/ESadoption.pdf].

- *Wisconsin* – The state's Department of Natural Resources requires CO_2 emissions reporting beyond the threshold level of 100,000 tons per year [NR 438.03 (2005)].

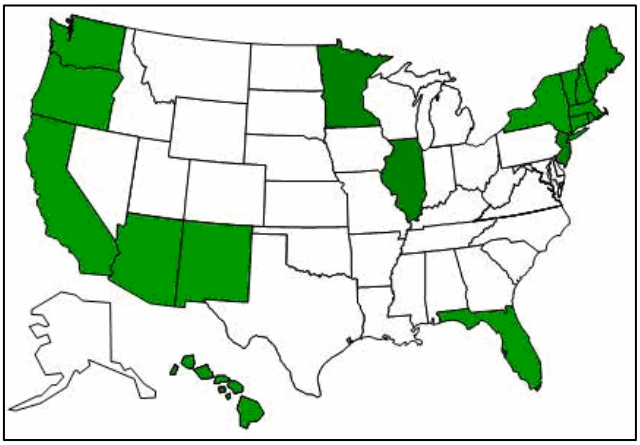
Renewable Portfolio Standards:[177]

Renewable portfolio standards (RPSs) require electrical utilities within a jurisdiction to generate a certain percentage of their electricity from renewable sources by a given deadline. To date, twenty-five states as well as the District of Columbia have adopted some form of RPS. RPSs have been adopted by states covering over 65% of the U.S. GDP and 60% of its population.



[177] Section adapted from Pew Ctr. on Global Climate Change, States with Renewable Portfolio Standards, http://www.pewclimate.org/what_s_being_done/in_the_states/rps.cfm.

Statewide Emissions Reduction Goals [178]



AZ: 2000 levels by 2020; 50% below 2000 levels by 2040.[179]

CA: 2000 levels by 2010; 1990 levels by 2020; 80% below 1990 levels by 2050.[180]

CT: 1990 levels by 2010; 10% below 1990 levels by 2020; long term reduction goal of 75% below 1990 levels.[181]

FL: 2000 levels by 2017; 1990 levels by 2025; 80% reduction of 1990 levels by 2050.[182]

HI: 1990 levels by 2020.[183]

IL: 1990 levels by 2020; 60% below 1990 levels by 2050.[184]

ME: 1990 levels by 2010; 10% below 1990 levels by 2020; long-term goal of 75-80% below 2003 levels.[185]

MA: 1990 levels by 2010; 10% below 1990 by 2020; 75-85% below 1990 long-term.[186]

MN: 15% below 2005 levels by 2015; 30% below 2005 by 2025; 80% below 2005 by 2050.[187]

NH: 1990 levels by 2010; 10% below 1990 by 2020; 75-85% below 2001 long-term.[188]

NJ: 1990 levels by 2020; 80% below 2006 levels by 2050.[189]

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[178] Adapted from Pew Ctr. on Global Climate Change, A Look at Emissions Targets: United States – State & Regional, http://www.pewclimate.org/what_s_being_done/targets.
[179] Exec. Order No. 2006-13.
[180] Exec. Order No. S-03-05.
[181] GOVERNOR'S STEERING COMM. ON CLIMATE CHANGE, *Executive Summary*, *in* CONN. CLIMATE ACTION PLAN 2005, *available at* http://www.ctclimatechange.com/StateActionPlan.html.
[182] Exec. Order No. 07-127.
[183] H.B. 226, 24th Leg. (Haw. 2007) (signed by Gov. Lingle June 30, 2007), *available at* http://www.capitol.hawaii.gov/session2007/bills/HB226_CD1_.htm.
[184] Press Release, Governor Rod R. Blagojevich, Gov. Blagojevich Sets Goal to Dramatically Reduce Greenhouse Gas Emissions in Illinois, Feb. 13, 2007, *available at* http://illinois.gov/PressReleases/ShowPressRelease.cfm?SubjectID=2&RecNum=5715.
[185] ME. REV. STAT. ANN. tit. 38, § 574 *et. seq*. (2006).
[186] COMMONWEALTH OF MASSACHUSETTS, MASSACHUSETTS CLIMATE ACTION PLAN (2004), *available at* http://www.massclimateaction.org/pdf/MAClimateProtPlan0504.pdf.
[187] S.F. No. 145, 2d Engrossment, 85th Legis. Sess. (Minn. 2007).
[188] N.H. DEP'T OF ENVTL. SERVS., THE CLIMATE CHANGE CHALLENGE (2001), *available at* http://www.des.state.nh.us/ard/climatechange/challenge.pdf.
[189] Exec. Order No. 54 (2007).

NM: 2000 levels by 2012; 10% below 2000 by 2020; 75% below 2000 by 2050.[190]

NY: 5% below 1990 by 2010; 10% below 1990 levels by 2020.[191]

OR: Stabilize by 2010; 10% below 1990 levels by 2020; 75% below 1990 levels by 2050.[192]

RI: 1990 levels by 2010; 10% below 1990 levels by 2020.[193]

VT: 1990 levels by 2010; 10% below 1990 by 2020; 75-85% below 2001 levels long-term.[194]

WA: 1990 levels by 2020; 25% below 1990 levels by 2035; 50% below 1990 levels by 2050.[195]

Statewide Financial Incentives

Nearly every state in the nation has implemented some set of financial incentives to support the development and installation of renewable energy, and several have adopted incentives for energy efficiency measures. These incentives bolster the economic viability of products and services that emit fewer greenhouse gases than their traditional counterparts. These measures, ranging from taxes to grants, are outlined in the tables below.

Overview of Financial Incentives for Renewable Energy[196]

State/Territory	Personal Tax	Corporate Tax	Sales Tax	Property Tax	Rebates	Grants	Loans	Industry Recruit.	Bonds	Production Incentive*
Alabama	1-S				4-U	1-S	1-S, 1-U			1-U
Alaska							2-S			1-U
Arizona	3-S	1-S	1-S	1-S	6-U		1-U			

[190] Exec. Order No. 05-033.

[191] N.Y. STATE ENERGY PLANNING BD., STATE ENERGY PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT (ENERGY PLAN) (2002), *available at* http://text.nyserda.org/Energy_Information/energy_state_plan.asp.

[192] GOVERNOR'S ADVISORY GROUP ON GLOBAL WARMING, OREGON STRATEGY FOR GREENHOUSE GAS REDUCTIONS (2004), *available at* http://sustainableoregon.org/documents/climate/Oregon_Strategy_Final_Report.pdf; H.B. 3543, 74th Legis. Assem., Reg. Sess. (Or. 2007).

[193] R.I. Greenhouse Gas Stakeholder Process, Rhode Island Greenhouse Gas Action Plan (2002), *available at* http://righg.raabassociates.org/.

[194] CLIMATE NEUTRAL WORKING GROUP, FIRST BIENNIAL REPORT TO GOV. JAMES H. DOUGLAS (2005), *available at* http://www.anr.state.vt.us/air/Planning/docs/CNWG_1st_Biennial_Report.pdf.

[195] Exec. Order No. 07-02.

[196] Database for State Incentives for Renewable Energy (DSIRE), Summary Tables: Financial Incentives for Renewable Energy, http://www.dsireusa.org/summarytables/.

State/Territory	Personal Tax	Corporate Tax	Sales Tax	Property Tax	Rebates	Grants	Loans	Industry Recruit.	Bonds	Production Incentive*
Arkansas										
California	1-S			1-S	3-S, 19-U, 1-L	1-L	1-U, 1-S			1-S
Colorado			1-S	2-S	4-U, 1-L	1-L	3-U, 1-L			
Connecticut				1-S	1-S	5-S	3-S			2-P
Delaware					1-S	2-S				
Florida		2-S	1-S		1-S, 4-U	1-S	1-U			
Georgia			1-S		3-U		4-U			1-U
Hawaii	1-S	1-S			3-U		2-U, 1-L	1-S	1-L	
Idaho	1-S		1-S			2-P	1-S		1-S	1-P
Illinois				1-S	1-S	1-P				
Indiana				1-S	4-U					
Iowa	1-S	1-S	1-S	3-S	4-U	1-S	2-S			
Kansas				1-S						
Kentucky					6-U		1-P, 3-U			1-U
Louisiana				1-S			1-S			
Maine					1-S	1-S				
Maryland	2-S	2-S	1-S	2-S	1-S, 1-L		2-S			
Massachusetts	3-S	5-S	1-S	1-S	1-S, 1-U	3-S	1-S, 1-U	1-S		1-S, 1-P
Michigan				1-S	1-U	4-S		2-S		
Minnesota			2-S	1-S	1-S, 18-U	3-U	3-S, 1-U			1-S, 3-U
Mississippi					3-U		1-S			1-U
Missouri		1-S			3-U		1-S, 1-U			
Montana	2-S	1-S		3-S	1-U	2-P, 1-U	1-S			1-P
Nebraska		1-S			3-U		1-S			
Nevada				3-S	1-S					1-S
New Hampshire				1-S	2-U		1-S			
New Jersey			1-S		2-S		1-S	1-S		1-S
New Mexico	1-S	1-S	1-S						1-S	1-U
New York	2-S	1-S	1-S	2-S	4-S, 2-U	1-S	2-S	1-S		
North Carolina	1-S	1-S		1-S			1-S			1-U, 1-P
North Dakota	1-S	1-S	1-S	2-S						
Ohio		1-S	1-S	1-S		2-S	2-S			1-S
Oklahoma		1-S						1-S		
Oregon	1-S	1-S		1-S	2-S , 10-U	2-P, 1-S	1-S, 7-U			1-P
Pennsylvania				1-S		3-S, 4-L	2-S, 5-L, 1-U			
Rhode Island	1-S		1-S	1-S	1-S, 1-U					1-P
South Carolina	1-S	2-S			1-S, 2-U		5-U			
South Dakota				2-S						
Tennessee				1-S		1-S	1-S			1-U
Texas		1-S		1-S	6-U			1-S		
Utah	1-S	1-S	1-S		1-U					
Vermont			1-S		1-S	1-U				1-U
Virginia				1-S				1-S		1-U
Washington			1-S		11-U	2-P	8-U	1-S		3-U, 1-S, 1-P
West Virginia		1-S		1-S						
Wisconsin				1-S	1-S, 3-U	1-S, 1-U	1-U			2-U
Wyoming			1-S		1-S, 1-U					
D.C.						1-S				
Totals	**24**	**27**	**20**	**40**	**154**	**52**	**81**	**10**	**3**	**34**

S = State/Territory L = Local U = Utility P = Private

Overview of Financial Incentives for Energy Efficiency[197]

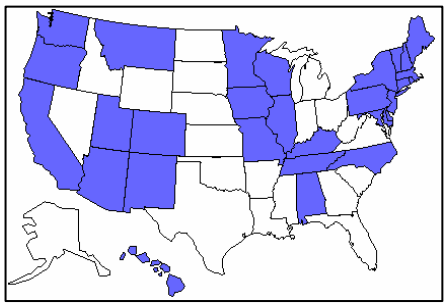
State/Territory	Personal Tax	Corporate Tax	Sales Tax	Property Tax	Rebates	Grants	Loans	Bonds
Alabama					13-U		11-U, 1-S	
Alaska					2-U		3-S	
Arizona	1-S				3-U		2-U	
Arkansas							3-U, 1-S	
California	1-S				57-U	5-U	7-U, 1-S	
Colorado					16-U	1-U	2-U	
Connecticut			1-S		14-U	2-U, 2-S	3-U, 2-S	
Delaware						2-S		
Florida					20-U	2-U, 1-S	3-U	
Georgia					15-U		12-U	
Hawaii					5-U			
Idaho	1-S				15-U		1-S, 2-U	
Illinois					2-U, 1-S	2-S		
Indiana					4-U	1-U		
Iowa					14-U	1-S	3-U, 1-S	
Kansas					1-U		1-S	
Kentucky					12-U		7-U	
Louisiana					1-U, 1-S		1-S	
Maine					1-U, 2-S		2-S	
Maryland	1-S	1-S		2-S			1-U, 2-S	
Massachusetts	2-S	2-S			27-U	1-U	6-U	
Michigan						3-S		
Minnesota					39-U	6-U	4-U, 4-S	
Mississippi					5-U		3-U, 1-S	
Missouri					8-U		2-U, 1-S	
Montana	1-S	1-S			5-U	1-U	1-U, 1-S	1-S
Nebraska					3-U		1-S	
Nevada				1-S	4-U			
New Hampshire					14-U	3-U	2-U, 1-S	
New Jersey					5-S		1-U, 2-S	
New Mexico					3-U			1-S
New York	1-S	1-S		1-S	3-U, 4-S	3-S	2-S	
North Carolina					6-U, 1-S		11-U, 1-S	
North Dakota						1-S	1-U	
Ohio					1-U	1-S	2-S	
Oklahoma	1-S				1-U		2-S	
Oregon	1-S	1-S			29-U, 5-S	1-U	13-U, 1-S	
Pennsylvania						3-S	1-U, 3-S	
Rhode Island					3-U, 2-S		2-U	
South Carolina							9-U, 1-S	
South Dakota					2-U	1-U	1-U	
Tennessee					21-U		23-U, 2-S	
Texas					26-U		5-U, 1-S	
Utah					7-U			
Vermont					3-U, 9-S		1-U, 1-S	
Virginia						1-S	3-U, 1-S	
Washington					58-U	3-U	8-U	
West Virginia						1-S		
Wisconsin					13-U, 4-S	2-U	1-U, 1-S	
Wyoming					3-U	1-S	1-U	
D.C.	1-S				1-S			
Totals	**11**	**6**	**1**	**4**	**515**	**52**	**200**	**2**

S = State/Territory U = Utility

[197] Database for State Incentives for Renewable Energy (DSIRE), Summary Tables: Financial Incentives for Energy Efficiency, http://www.dsireusa.org/summarytables/.

The U.S. Department of Energy offers an excellent state-by-state overview of energy efficiency and renewable energy endeavors at its site http://www.eere.energy.gov/states/.

Additional State Policies to Reduce Greenhouse Gas Emissions



Climate Action Plans:[198] Climate action plans provide technical and policy analysis to inform development of state greenhouse gas emissions reduction plans. Each state (colored here in blue) investigates emissions, climate liabilities and policies to develop state-specific strategies for moving forward with regulatory measures and incentives.

Greenhouse Gas Inventories:[199] To date, all but eight states—Alaska, Idaho, North Dakota, South Dakota, Nebraska, Wyoming, Arkansas, South Carolina—have commissioned or completed greenhouse gas inventories in order to characterize state emissions and major source categories.

Other State Actions: The sections above capture only some of the state actions concerning mitigation of greenhouse gas emissions. The table below outlines additional state level climate policies to further illustrate the diversity of these measures:

State	*Greenhouse Gas Emissions Reduction/Climate Change Mitigation Measure*
Alaska	• New legislation directed the establishment of the Alaska Climate Impact Assessment Commission to evaluate the risks and costs associated with global

[198] Pew Ctr. on Global Climate Change, States with Climate Action Plans, http://www.pewclimate.org/what_s_being_done/in_the_states/action_plan_map.cfm.
[199] Pew Ctr. on Global Climate Change, States with Greenhouse Gas Inventories, http://www.pewclimate.org/what_s_being_done/in_the_states/inventories_map.cfm.

	climate change (AK H.C.R 30)
Arizona	• A recent executive order dedicated the state to achieving 2000-level greenhouse gas emissions by 2020, and work with other western states to establish an emissions registry and reporting mechanisms. Further requires state agencies to only purchase low-emission vehicles. [Exec. Order No. 2006-13]
California	• SB 1771 & 527 establish the California Climate Action Registry to help registrants establish emissions baselines in order to comply with present and future emissions regulations.
Colorado	• Executive Order D011 07: directs state facilities to reduce their energy consumption 20%, and state agencies to achieve a 25% volumetric reduction in petroleum consumption, by 2012. • Colorado Climate Change Markets Act (COLO. REV. STAT. § 25-1-1301 *et. seq.*): commissioning reports and establishing financial incentives for renewable energy technology research. • Law requiring electrical utilities to submit plans for installing transmission lines to untapped, high wind-capacity regions of the state.
Connecticut	• CONN. GEN. STAT. § 22a-200 to -201c (2007) – sets a statewide emissions goal of 1990 levels by 2010, orders the establishment of a greenhouse gas registry that would integrate with other states in the region; § 22a-200b(b) compels operators of any facility that is required to report air emissions data under Title V of the Federal Clean Air Act to also submit greenhouse gas emissions information to a registry; establishes a greenhouse gas labeling system for new cars; adds a "greenhouse gas reduction fee" to auto registration costs; and directs a steering committee to review vehicle emissions regulations in light of emissions reductions goals.
Delaware	• Global Warming Response Act, now awaiting approval from the Governor, sets stringent emissions reduction goals.

Idaho	• Exec. Or. 2007-05: provides for the establishment of a greenhouse gas inventory and calls for recommendations on emissions reductions.
Illinois	• Member of Chicago Climate Exchange with target of reducing emissions from government activities 6% by 2010. • Exec. Or. No. 11-2006: Establishes the Illinois Climate Change Advisory Group, orders the annual inventory of state greenhouse gases.
Maine	• 38 M.R.S. § 575 et. seq.: mandates a statewide emissions inventory and registry; sets out state emissions reduction goals. • 2007 ME. H.P. 920 (enacted): Calls for a report concerning hydro-power development including methods for evaluating current and future costs of greenhouse gas emissions and fossil fuel independence. • 35-A M.R.S. § 4711 (2006): requires natural gas utilities servicing over 5,000 residential customers to sponsor 'cost-effective conservation programs.'
Maryland	• Exec. Or. 01.01.2007.07: Establishes a Climate Change Commission to address the drivers and causes of climate change including an impact assessment and the development of emissions reduction goals.
Minnesota	• S.F. No. 145, 2d Engrossment, 85th Legis. Sess. (Minn. 2007): sets statewide emissions reductions goals, outlines measures for energy conservation and public utility improvements for efficiency.
New Jersey	• Reclassified CO_2 as an air contaminant for the purposes of facility permitting and emissions regulation. *See* N.J. Dep't of Envtl. Prot., Div. of Air Quality, Regulatory Development, http://www.nj.gov/dep/aqm.
Oregon	• H.B. 3543 establishes stringent, statewide greenhouse gas emissions goals and directs the Oregon Global Warming Commission to develop policy recommendations to support the achievement of those goals including the

	possible creation of a statewide cap-and-trade program.
South Carolina	• Established the Governor's Climate, Energy, and Commerce Advisory Committee to develop greenhouse gas emissions reduction strategies and other policy avenues that would provide the state with economic opportunities.
West Virginia	• S.B. 337 (W. VA. CODE R. § 22-5-19) concerning a greenhouse gas emissions inventory.
Wisconsin	• Office of Energy Independence established to bolster the biofuels industry and support energy efficiency and energy independence initiatives.

Other Resources

The compilation of state actions presented above is in no way exhaustive. It is merely illustrative of the numerous, far-reaching state actions to reduce greenhouse gas emissions. A number of frequently updated online resources further describe state-level climate policies:

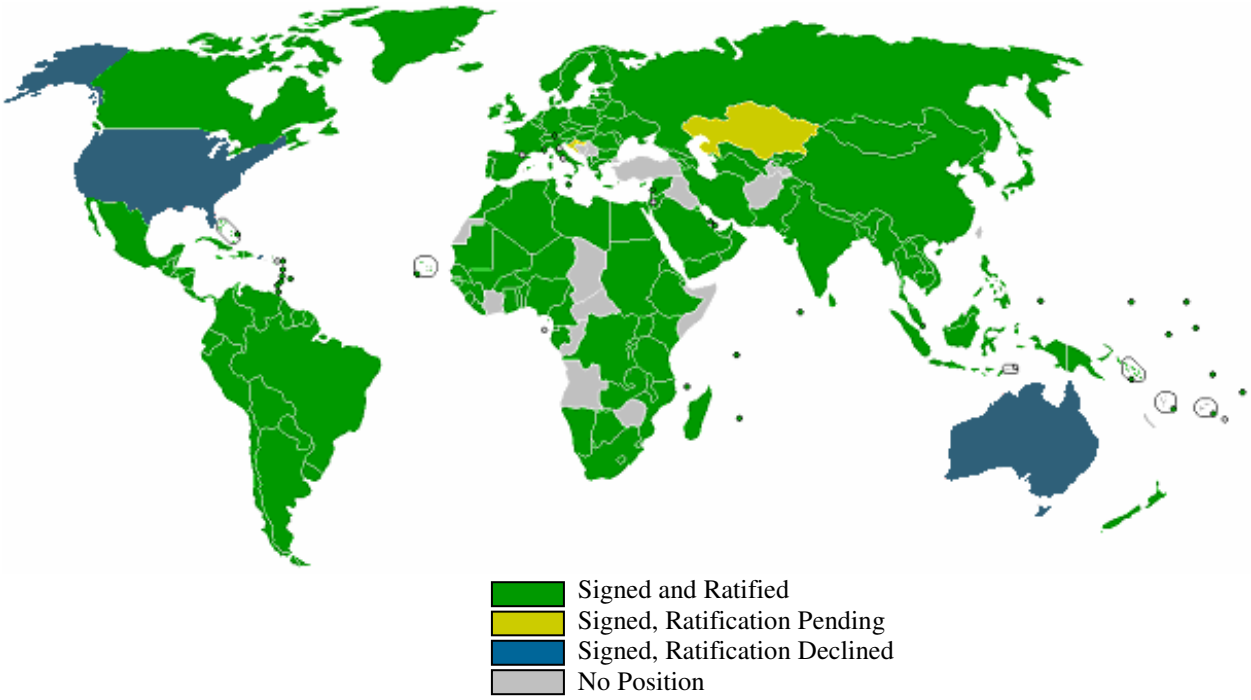
- The Pew Center on Global Climate Change collects information on state progress toward climate change mitigation at http://www.pewclimate.org/what_s_being_done/in_the_states. The Center has also compiled an overview report on such actions: PEW CTR. ON GLOBAL CLIMATE CHANGE, CLIMATE CHANGE 101: STATE ACTION (2006), *available at* http://www.pewclimate.org/docUploads/101_States.pdf.
- The Database of State Incentives for Renewables & Efficiency (DSIRE), published by the Interstate Renewable Energy Council, provides information on incentive programs to bolster the use of energy efficiency and renewable energy. *See* http://www.dsireusa.org/.
- The Office of Energy Efficiency and Renewable Energy of the U.S. Department of Energy publishes a number of state activities on state-specific web pages. *See* http://www.eere.energy.gov/states/state_information.cfm.
- The State Environmental Resource Center acts a clearing house for state action measures, publishing both overviews and analyses. *See* http://www.serconline.org/.
- National Caucus of Environmental Legislators (NCEL), http://www.ncel.net/.

NATIONWIDE AND INTERNATIONAL REGULATION OF GREENHOUSE GAS EMISSIONS

International Agreements on Greenhouse Gas Emissions Reduction

Kyoto Protocol: A broadly ratified treaty developed under the United Nations Framework Convention on Climate Change which establishes legally binding targets and mechanisms for effecting global reductions in greenhouse gas emissions.[200] The Protocol achieves its goals through three mechanisms that allow for the international trade of emissions credits, grant industrialized countries emissions credits by financing projects in developed "transition economies" like those of eastern Europe, and structure financing mechanisms for emissions-avoidance or emissions-reduction projects in developing countries.[201]

Kyoto Protocol Ratification Status (as of December 2006)[202]



[200] *See* U.N. Framework Convention on Climate Change (UNFCCC), Essential Background, http://unfccc.int/essential_background/items/2877.php.
[201] *See* U.N. Framework Convention on Climate Change (UNFCCC), The Kyoto Protocol, http://unfccc.int/kyoto_protocol/background/items/2878.php.
[202] *See* ROBERT J. KEATING ET AL., ENERGY & ENVTL. SEC. INITIATIVE, GREENHOUSE GAS EMISSIONS TRADING: EMERGING MARKETS AND OPPORTUNITIES FOR COLORADO 21-22 (Mar. 2007), *available at* http://www.colorado.edu/law/eesi/CO_GHG_Trading_Report.pdf.

The Kyoto Protocol places responsibility on individual countries to mitigate greenhouse gas emissions proportional to their respective historical emissions. As such, industrialized countries with mature economies have more stringent emissions reduction requirements than do countries with transition economies. Developing countries are not required to achieve reductions in greenhouse gas emissions. The Kyoto Protocol entered into force in February of 2005.

European Union Emissions Trading Scheme (EU ETS): Established in order to achieve Kyoto-established emissions reduction goals, the EU ETS is a downstream, company level, greenhouse gas emissions trading system organized under the auspices of the European Union. It currently covers nearly 12,000 installations in 25 countries and across six major industrial sectors.[203] Countries participating in the trading scheme are responsible for allocating and regulating those GHG emissions allowances granted them by the Kyoto Protocol.[204] Emissions permits traded on the EU ETS are granted only if satisfactory monitoring and reporting mechanisms are in place.[205]

Asia-Pacific Partnership on Clean Development and Climate (AP6): The six partner countries—Australia, China, India, Japan, Republic of Korea, and the United States—represent about half of the world's economy, population, and energy use. The Partnership strives to expand investment and trade in clean energy technologies, goods, and services, focusing on key market sectors.[206] The Partnership is without legally binding commitments for greenhouse gas emissions reductions. It provides a multinational forum for advancing technology development. Canada has expressed interest in joining the partnership, and that country's membership is currently under consideration.[207]

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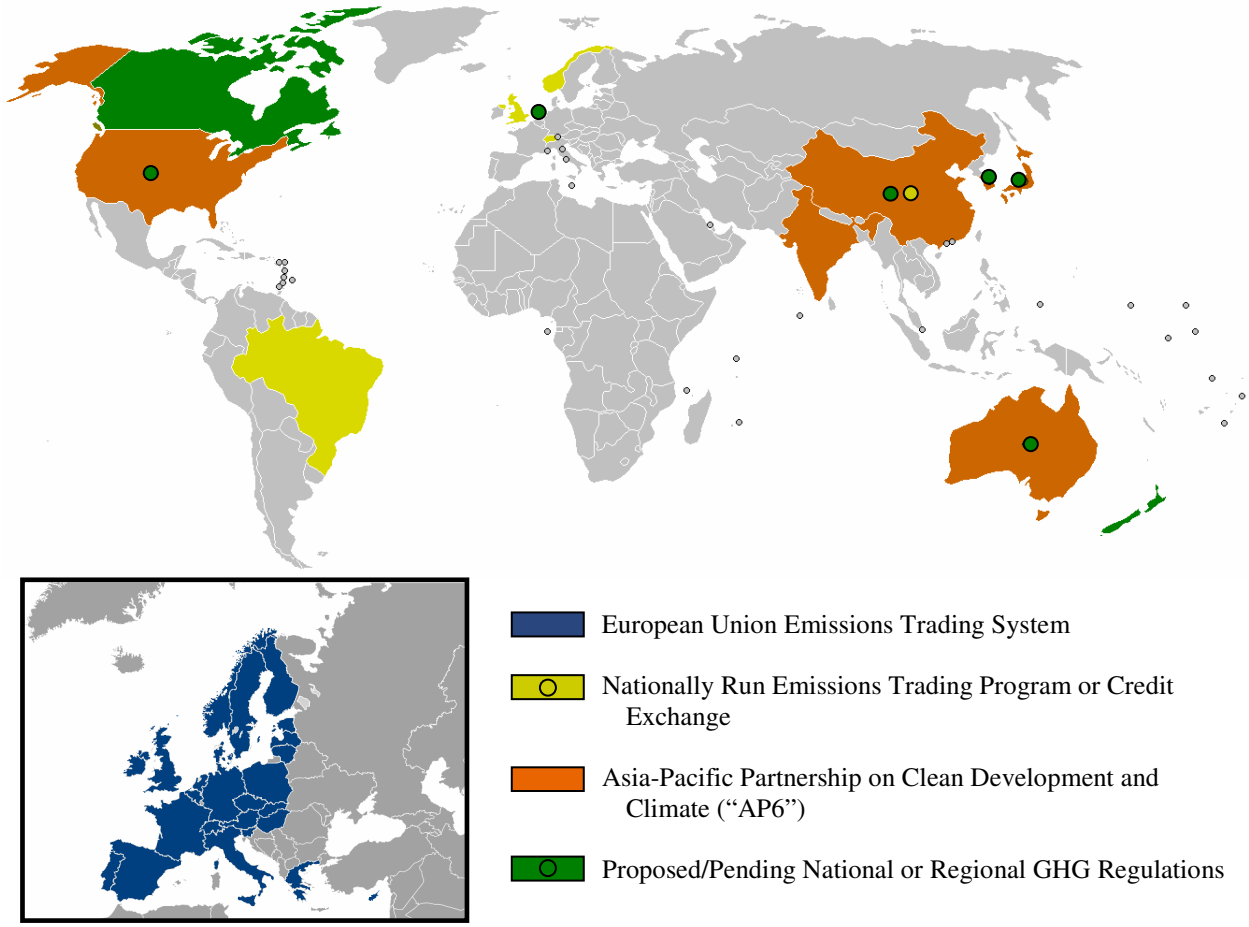
[203] *Id*. at 16-17.
[204] *See* Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003, 2003 O.J. (L 275) 32 [hereinafter Emissions Trading Directive].
[205] *See id* at 35.
[206] *See* Asia-Pacific P'ship on Clean Dev. & Climate, http://www.asiapacificpartnership.org/.
[207] *See* Toshio Aritake, *Meeting of Asia-Pacific Climate Partnership Considers Pilot Projects; Canada May Join*, 30 INT'L ENV'T REP. (BNA) at 584 (July. 25, 2007).

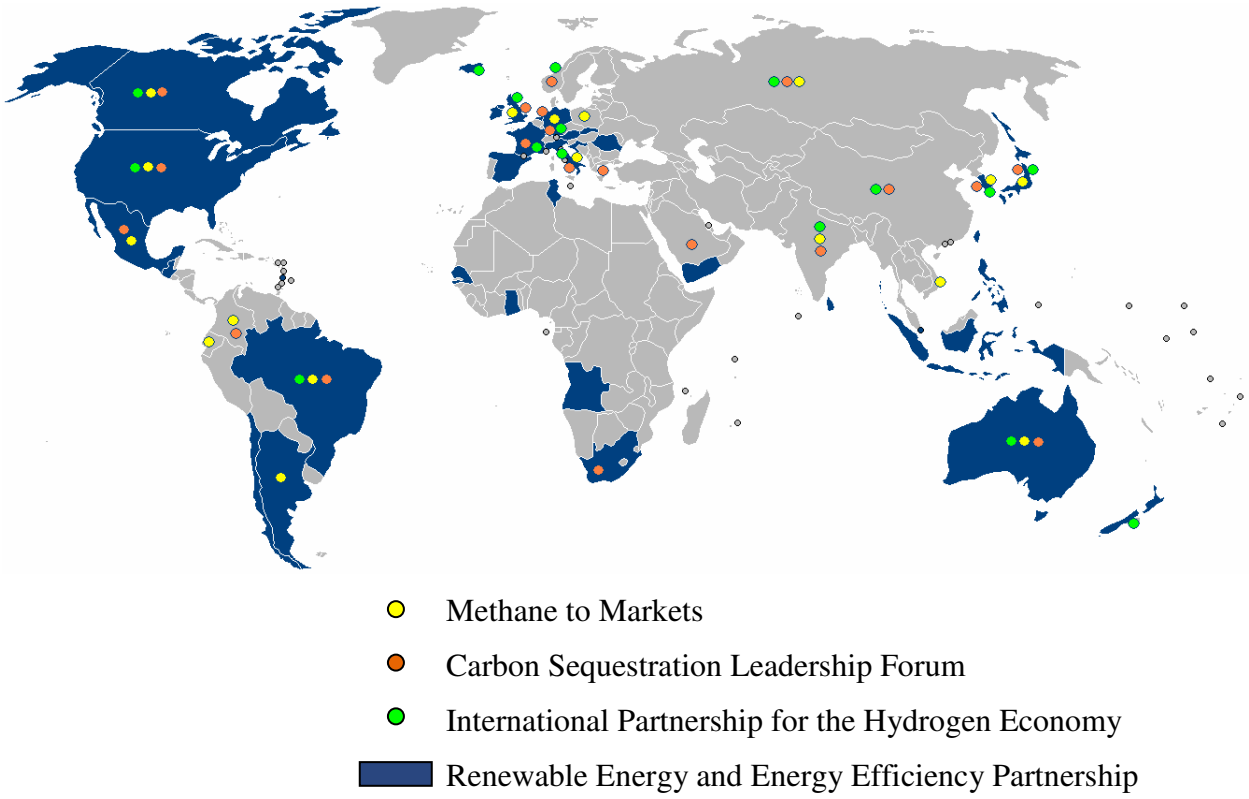
Trading of GHG Emissions Credits & Partnerships on Climate Change[208]



There are several other international partnerships that focus on mitigating global warming pollution by encouraging the development of specific technology markets and changes in energy infrastructure. Like the AP6, these partnerships do not include binding goals. However, they do indicate national interest on the part of their member states to effect emissions reductions and facilitate the development of new business opportunities over carbon-intensive products and services.

[208] *See* KEATING ET AL., *supra* note 202, at 21-25.

Other International Climate-Related Partnerships and Market Efforts



Methane to Markets: A partnership of twenty countries to encourage the development and implementation of methane capture technologies for energy production and climate change mitigation. [www.methanetomarkets.org]

Carbon Sequestration Leadership Forum (CSL Forum): An international climate change initiative focused on the development of cost-effective means for the capture and long-term sequestration of CO_2 emissions. CSL Forum has twenty-one member states along with the European Commission. [www.cslforum.org]

International Partnership for the Hydrogen Economy (IPHE): A partnership established in 2003 of sixteen countries committed to accelerating the development of hydrogen and fuel cell technologies. [www.iphe.net]

Renewable Energy and Energy Efficiency Partnership (REEEP): With a membership of 36 governments as well as NGO and multinational businesses, REEEP is a prominent partnership that funds projects and analyzes policy mechanisms to encourage renewable energy and energy efficiency. [www.reeep.org]

International Dialogues on Climate Change

- *Vienna Climate Change Talks*, August 27-31, 2007 – This conference was held under the auspices of the U.N. Framework Convention on Climate Change and attended by over 900 delegates of the Parties to the Convention. The conference addressed how a global post-Kyoto climate policy will be negotiated and reached "agreement on key elements for an effective international response to climate change."[209]

- *Heiligendamm Summit*, June 7-8, 2007 – A G8 summit that included the world's five largest developing economies (Brazil, China, India, Mexico, and South Africa) in discussions concerning post-2012 international climate change policy. The summit reiterated the participating countries' dedication to mitigating climate change and outlined commitments to cooperate in certain fields including cross-border development, research and development, energy infrastructure revision, and sustainable development, especially in Africa.[210] The group committed to consideration of an emissions reduction goal of halving current emissions by 2050.[211]

[209] Press Release, UNFCC Secretariat, Vienna UN Conference Shows Consensus on Key Building Blocks for Effective International Response to Climate Change (Aug. 31, 2007), *available at* http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/20070831_vienna_closing_press_release.pdf; *see also* U.N. Framework Convention on Climate Change, Vienna Climate Change Talks 2007, http://unfccc.int/meetings/intersessional/awg_4_and_dialogue_4/items/3999.php.
[210] *See* Joint Statement by the German G8 Presidency and the Heads of State and/or Government of Brazil, China, India, Mexico and South Africa on the Occasion of the G8 Summit in Heiligendamm, Germany, 8 June 2007, *available at* http://www.g-8.de/Content/EN/Artikel/__g8-summit/anlagen/o5-erklaerung-en,property=publicationFile.pdf.
[211] Stephen Gardner, *Summit Discussions Conclude with Pledge by Developing Nations, G-8 to Do 'Fair Share'*, 30 INT'L ENV'T REP. (BNA) at 482, June 13, 2007.

- *United Nations Climate Change Conference*, Nairobi, Nov. 6-17, 2006 – This conference assessed progress of the implementation of the Kyoto Protocol, and hosted the twelfth session of the Conference of the Parties to the Climate Change Convention.[212]

- *Climate Dialogue at Pocantico*, September 2005 – A convening of senior policymakers and stakeholders from 15 countries to develop options and recommendations for policy approaches to mitigate global climate change.[213]

- *Gleneagles Summit*, July 6-8, 2005 – A G8 summit focusing on climate change, clean energy, and sustainable development. The adopted plan of action identified several methods to promote renewable energy and energy efficiency. These include, *inter alia*, reviewing building codes and vehicle standards to identify best practices, adopt market-based policy frameworks to finance the transition to cleaner energy sources, and encourage multilateral development banks to consider a project's greenhouse gas intensity.[214]

Foreign Greenhouse Gas Emissions Regulations and Climate Change Mitigation Schemes

Included below are brief overviews of the steps some countries are taking to mitigate global climate change. This summary compilation is provided to illustrate the extensive diversity and number of such legislative and other regulatory measures internationally.

Australia: On June 3, 2007, Australia's Prime Minister announced that the country would be implementing an emissions reduction and trading system that will have broad coverage

[212] *See* U.N. Framework Convention on Climate Change, United Nations Climate Change Conference – Nairobi 2006, http://unfccc.int/meetings/cop_12/items/3754.php; *see also* Pew Ctr. on Global Climate Change, COP 12 and COP/MOP 2 Nairobi, http://pewclimate.org/what_s_being_done/in_the_world/cop12/.
[213] *See* Pew Ctr. on Global Climate Change, Climate Dialogue at Porcantico, http://pewclimate.org/pocantico.cfm.
[214] *See* Pew Ctr. on Global Climate Change, Summary of G8 Summit, http://pewclimate.org/policy_center/international_policy/summary_of_g8.cfm.

of greenhouse gas emissions sources and the capability to be tied to other national or international trading programs. Trading is set to begin no later than 2012.[215]

Brazil: In conjunction with the World Bank and a Japanese bank, Brazil will be launching a carbon exchange in September 2007 to auction off carbon emissions credits obtained under the Clean Development Mechanism of the Kyoto Protocol.[216]

Canada: John Baird, Canadian Environment Minister, formally proposed a greenhouse gas emissions reduction plan in April of 2007, setting its sights on a 20% reduction from current levels by 2020. The plan includes a regulatory framework and enforcement mechanisms to ensure reduction goals are met.[217] Additionally, the province of Quebec will implement a tax on carbon dioxide emissions in October of 2007.[218]

China: In June of 2007, China issued a national plan to reduce the nation's greenhouse gas emissions. The plan does not include mandatory caps, but discusses future adoption of tax incentives and low-interest loans to encourage clean development.[219] Further, China announced in February of 2007 that it would launch the developing world's first carbon credit exchange in collaboration with the United Nation's Development Program.[220]

Germany: In May of 2007, Environment Minister Sigmar Gabriel unveiled an eight-point plan for reducing Germany's greenhouse gas emissions 40% from 1990 levels by 2020. The plan includes efforts to increase the efficiency of cogeneration power plants and motor vehicles,

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[215] *See* Dep't of the Prime Minister & Cabinet, Australian Gov't, Climate Change, http://www.pmc.gov.au/climate_change/index.cfm.
[216] *See Carbon Trading: Brazil Opens Carbon Exchange*, CLIMATE CHANGE CORP.COM, Aug. 2, 2007, http://www.climatechangecorp.com/content.asp?ContentID=4885.
[217] *See* Peter Menyasz, *Canada Proposes New Framework to Cut Greenhouse Gas Emissions, Air Pollutants*, 30 INT'L ENV'T REP. (BNA) at 334, May 2, 2007.
[218] *See Canada's Quebec Province Plans Carbon Tax*, 30 INT'L ENV'T REP. (BNA) at 470, June 13, 2007.
[219] *See* Kathleen E. McLaughlin, *China Plan Emphasizes Energy Efficiency; Country Will Not Support Mandatory Targets*, 30 INT'L ENV'T REP. (BNA) at 471, June 13, 2007.
[220] *See* KEATING ET AL., *supra* note 202, at 25; Kathleen E. McLaughlin, *China to Establish GHG Emissions Exchange with U.N. in Bid to Spur Clean Development*, 30 INT'L ENV'T REP. (BNA) at 163, Feb. 21, 2007.

as well as boost the percentage of renewable energy in the nation's overall use from 12 to 20%.[221]

Japan: The Japanese government announced plans in February of 2007 to establish mandatory emissions-reduction targets for industry and develop a trading platform for greenhouse gas emissions credits.[222] Japan has also unveiled a program to promote energy efficiency to be jointly implemented by the government and industry. The program will focus on the utilization of cutting edge technology in several sectors to capture energy from existing industrial process, and retrofit energy-intensive processes.[223] Additionally, the Tokyo municipal government will soon impose compulsory CO_2 emissions reduction targets on large sources within the city, including factories and office buildings. The program involves tax breaks for companies meeting the reduction goals and penalties for those exceeding the targets. It will later be expanded to cover smaller emissions sources.[224] Finally, Japan has announced that the global environment and climate change will be at the center of next year's Group of Eight summit.[225]

New Zealand: New Zealand has announced its goal to be a carbon neutral nation.[226] To this end, the government has released a number of proposals for public comment, including energy efficiency and conservation strategies, sustainable land management measures, and transitional strategies to move toward low-emissions electricity production. As Jim Anderton, New Zealand Minister for Agriculture and Forestry, noted: "Climate change presents a very real threat not only to the way we use our land, but to our international markets . . . . Already there is talk in Europe of border taxes on goods from countries that aren't taking effective action to

[221] *See* Niels Sorrells, *German Environment Minister Unveils Plan to Cut Carbon Emissions 40 Percent by 2020*, 30 INT'L ENV'T REP. (BNA) at 324, May 2, 2007.
[222] *See Japan Plans to Launch Emissions Trading Platform*, 30 INT'L ENV'T REP. (BNA) at 204, Mar. 7, 2007.
[223] *See Japan Plans to Promote Energy Efficient Technology*, 29 INT'L ENV'T REP. (BNA) at 742, Oct. 4, 2006.
[224] *See* Toshio Aritake, *Tokyo Considers Mandatory Limits for Large Carbon Dioxide Emitters*, 30 INT'L ENV'T REP. (BNA) at 474, June 13, 2007.
[225] *See* Nancy Ognanovich & Stephen Gardner, *Japan Plans to Make Environment Focus of Next Year's G-8 Summit*, 30 INT'L ENV'T REP. (BNA) at 483, June 13, 2007.
[226] *See* Eduard Goldberg, *New Zealand Prime Minister Announces Plans to Make Country 'Carbon Neutral'*, 30 INT'L ENV'T REP. (BNA) at 166, Feb 21, 2007.

address climate change. It's in our economic interest to be part of the global response to climate change. We need to take action to reduce the risks."[227]

Norway: In April of 2007, Norwegian Prime Minister Jens Stoltenberg outlined his government's plans to make the country entirely greenhouse gas neutral by 2050. He further expressed a desire to lead the way in developing a new, binding, and truly global treaty for the reduction of greenhouse gas emissions to succeed the Kyoto Protocol.[228] The country has also implemented a sales tax on passenger vehicles which is calculated relative to the car's carbon dioxide emissions.[229]

Switzerland: Switzerland announced it will impose a tax on certain fossil fuels starting in 2008 in order to help achieve greenhouse gas emissions reduction goals. The tax will be levied on imported heating oil and natural gas.[230]

United Kingdom: The United Kingdom has developed a National Allocation Program in accordance with the EU ETS Directive. These regulations cover installations involved in energy activities, the production and processing of ferrous materials, mineral processing, and paper and wood pulp production.[231] To this end, the Government has published a code of best practice for trading emissions credits.[232] Further, the U.K.'s Climate Change Bill, proposed in March of 2007, is currently under consideration. It would, if implemented, require future UK governments to commit to greenhouse gas emissions reductions by establishing rolling, 5-year term emissions reduction targets.[233] The U.K. has also adopted an Energy Efficiency Commitment Program

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[227] Eduard Goldberg, *New Zealand Proposals to Reduce Emissions Consider Incentives for Agriculture, Forestry*, 30 INT'L ENV'T REP. (BNA) at 41, Jan. 10, 2007.
[228] *See* Marcus Hoy, *Norwegian Prime Minister Announces Plans to Cut Carbon Emissions to Zero by 2050*, 30 INT'L ENV'T REP. (BNA) at 325, May 2, 2007.
[229] *See* Marcus Hoy, *Norway Revises Vehicle Purchase Tax to Target Carbon Dioxide Emissions*, 30 INT'L ENV'T REP. (BNA) at 67, Jan. 24, 2007.
[230] *See* Daniel Pruzin, *Switzerland to Impose Carbon Dioxide Tax After Missing Emissions Reduction Target*, 30 INT'L ENV'T REP. (BNA) at 539, June 11, 2007.
[231] *See* KEATING ET AL., *supra* note 202, at 19.
[232] *See* Tom Blass, *Britain Drafts Standard for Buying, Selling Voluntary Greenhouse Gas Emissions Offsets*, 30 INT'L ENV'T REP. (BNA) at 66, Jan. 24, 2007.
[233] *See* Dep't for Env't, Food, & Rural Affairs, U.K. Legislation: Climate Change Bill, http://www.defra.gov.uk/environment/climatechange/uk/legislation/index.htm; Tom Blass, *U.K. Bill*

which encourages energy companies to implement efficiency measures utilizing market influences, a program highly praised by the International Energy Agency.[234] Additionally, the Mayor of London introduced a plan to cut the city's CO_2 emissions 60% by 2050 by using a suite of financial incentives.[235]

Other Resources

- The Energy & Environmental Security Initiative has compiled a database of thousands of bilateral and multinational agreements concerning energy and the environment, with many of these focused on the development and installation of renewable energy technologies and conservation measures. *See* http://lawweb.colorado.edu/eesi/.

- The Pew Center on Global Climate Change has several analytic reports and policy overviews on international dialogues surrounding GHG emissions and climate change mitigation. *See* http://pewclimate.org/what_s_being_done/in_the_world.

Envisions Five-Year Carbon Budgets to Achieve 60 Percent Reduction by 2050, 30 INT'L ENV'T REP. (BNA) at 218, Mar. 21, 2007.

[234] *See* Int'l Energy Agency, *Overview*, *in* ENERGY POLICIES OF IEA COUNTRIES – THE UNITED KINGDOM: 2006 REVIEW (2007), *available at* http://www.iea.org/w/bookshop/add.aspx?id=299*; U.K. Energy Efficiency Program Seen as Model*, 30 INT'L ENV'T REP. (BNA) at 192, Mar. 7, 2007.

[235] *See* Tom Blass, *London 'Climate Change Action Plan' Offers Measures to Cut Emissions from All Sources*, 30 INT'L ENV'T REP. (BNA) at 184, Mar. 7, 2007.

FEDERAL LEGISLATION RELATED TO CLIMATE CHANGE PENDING IN THE 110TH CONGRESS

— In the Senate —

S. 280 Climate Stewardship and Innovation Act of 2007 (McCain-Lieberman)

- Covers electric power, industrial, and commercial sectors of U.S. economy.
- Establishes a program for reduction of greenhouse gases (GHGs) in covered entities through a market system of tradable allowances. One tradable allowance is necessary for each metric ton of emissions.
- Declining cap for GHG emissions beginning in 2012:
    - 2012: cap at 2004 levels
    - 2020: cap at 1990 levels
    - 2030: cap at 20% below 1990 levels
    - 2050: cap at 60% below 1990 levels
- Allowances can be sold, exchanged, purchased, banked (saved for future years), borrowed (against emissions reductions of up to 5 years), or offset (up to 30%).
- EPA distributes allowances to companies directly or to Climate Change Credit Corporation, which publicly auctions allowances. Funds generated from CCCC used for first generation technology implementation, assistance for low income communities, and adaptation strategies.
- Supported by Sens. McCain, Lieberman, Collins, Obama, Snowe and Lincoln.

S. 485 Global Warming Reduction Act of 2007 (Kerry)

- Creates a market-based emissions cap on global warming emissions, with a progressive declining cap beginning in 2012.
- Requires the EPA to reset passenger vehicle emission levels every 5 years.
- Requires the Secretary of Agriculture to set standards for carbon sequestration and biological offsets.
- Sets benchmarks for increasing percentages of renewable fuel in gasoline, and creates tax incentives for use of hybrid and electric vehicles.

S. 6 National Energy and Environmental Security Act of 2007 (Reid)

- Expresses the sense of Congress that the President should (a) require reduction in GHG emissions; (b) expand the use of clean energy; (c) reduce the burden on consumers of rising energy costs; (d) eliminate tax giveaways to oil industries; (e) prevent price manipulation of oil.

S. 309 Global Warming Pollution Reduction Act (Sanders)

- Directs EPA to set aggressive milestones in aggregate net levels of emissions & authorizes the EPA to create a market-based program to achieve reduction in emissions.
- Requires each fleet of automobiles by every manufacturer to meet emissions standards by 2016.
- Requires electric generating units to meet standards comparable to new natural gas generation units and requires such units to devote a percentage of electricity produced for sale from low-carbon generation.
- Establishes low-carbon generation trading program.
- Increases research into low carbon technology by 100% every year for 10 years.
- Requires raising the percentage of renewable fuel in commercial gasoline.

S. 317 Electric Utility Cap and Trade Act of 2007 (Feinstein)

- Covers all Electric Generation Units (EGUs) that (a) have a nameplate capacity greater than 25 megawatts; (b) emit GHG; (c) generate electricity for sale.
- Creates a cap for all such emissions for 2011-2020, and creates a market-system to distribute emission allowances under the Climate Action Trust Fund.
- Funds generated by the CATF are used for: (a) adaptation assistance for communities adversely affected by the act; (b) mitigating the impacts of climate change on fish and wildlife.
- Requires EPA to create regulations concerning early reduction credits for GHG reduction or sequestration from 2000 to 2010.

S. 357 Ten-in-Ten Fuel Economy Act (Feinstein) (*see also* H.R. 349)

- Requires fuel economy labeling standards to include greenhouse gas emissions information.
- Revises Corporate Average Fuel Economy (CAFE) standards for passenger cars and light trucks to gradually increase to 35 mpg by 2019.

S. Res. 30 Sense of the Senate of the need to address global warming through international agreements (Biden)

- Expresses the sense of the Senate that the U.S. should participate in negotiations under the U.N. Framework Convention on Climate Change that will establish commitments from all countries that are major contributors of greenhouse gas emissions.

— In the House of Representatives —

H.R. 6 Renewable Fuels, Consumer Protection and Energy Efficiency Act of 2007 (to be submitted to conference committee)

- This energy legislation, versions of which have passed both Houses of Congress, would establish a wide variety of requirements and incentives to increase use of renewable fuels, decrease use of fossil fuels, and promote energy conservation.

H.R. 182 Team up for Energy Independence Act (Lofgren)

- Creates a national sales tax for automobiles, rising to 80% in 2011. Automobiles that use alternative fuels are exempted from the tax.

H.R. 550 Securing America's Energy Independence Act of 2007 (McNulty)

- Extends tax credits for fuel cell technology, solar technology and residential energy efficient property expenditures.

H.R. 791 Increase Renewable Fuel Content of Gas Sold in the United States (Weller)

- Increases the percentage of renewable fuels in commercial gasoline beginning in 2013.

H.R. 620 Climate Stewardship Act of 2007 (Olver-Gilchrist)

- Requires companies in electric power, industrial, and commercial sectors of U.S. economy to participate in allowance scheme with a declining cap beginning in 2012. Companies are required to purchase 1 allowance per metric ton of GHG emitted.
- Allowances can be sold, traded, retired, borrowed, or offset.
- Companies may offset emissions reductions in verifiable international reductions.
- Funds generated by the sale of allowances are used for: (1) development of clean technology; (2) incentives for carbon sequestration; (3) restoration of habitat for fish and wildlife.
- Requires states to develop climate change impact mitigation plans.

H.R. 670 DRIVE Act (*see also* S. 339 – DRIVE Act)

- Directs the White House Office of Managenent and Budget to set an oil savings target and action plan to reduce dependence on foreign oil.
- Directs Secretary of Transportation to create a fuel efficiency program for passenger car and light trucks.
- Requires an increasing percentage of vehicles to be alternative fuel vehicles, redirects IRS policy to encourage alternative fuel vehicles.
- Requires Secretary of Energy to reduce federal fleet consumption of petroleum by 20%, encourage the development of plug in hybrid vehicles.

H.R. 969 Public Utility Regulatory Policies Act Amendments of 2007 (Udall, Tom)

- Requires electric utilities to increase power generated from renewable sources from 1% in 2010 to 20% in 2020.

H.R. 1300 Program for Real Energy Security Act (Hoyer)

- Creates National Commission on Energy Security and Transition to New Fuels.
- Requires increasing use of biofuels and alternative fuel vehicles.

Other Resources

Energy & Envtl. Sec. Initiative, Climate Action Database: A Database of Major U.S. Climate Change Policy Proposals, http://lawweb.colorado.edu/eesi/dms/.

Pew Ctr.on Global Climate Change, Policy Analyses, http://www.pewclimate.org/policy_center/analyses.

BUSINESS LEADERS' COMMENTS ON CLIMATE CHANGE REGULATION AND DISCLOSURE

Business leaders increasingly recognize that regulation of greenhouse gas emissions is both necessary and inevitable. 90 percent of business leaders believe that government regulation in this area is imminent, and 67 percent believe it will take place within the next eight years.[236] Additionally, 93 percent consider climate change related risks when making investment decisions.[237] In another recent study, 28 percent of executives cited environmental concerns, including climate change, as one of the issues likely to have the greatest impact on shareholder value in the next five years, and 87 percent of global companies indicated that global warming represents commercial risks and/or opportunities.[238]

I. Investment Advisors on the Impact of Climate Change on Performance

- "Global warming is likely to prove (to be) one of those tectonic forces that — like globalization or the aging of populations — gradually but powerfully changes the economic landscape."

  – John Llewellyn, Senior Economic Policy Advisor, Lehman Brothers[239]

- "Energy security and climate change issues will not be resolved in the foreseeable future; instead these issues will only intensify going forward. . . . These changing dynamics present investment opportunities in companies that are better positioned around the regulations or offer competitive technology solutions. For investors, solutions to these challenges present a compelling investment opportunity."

  – Merrill Lynch Report, *Energy Security and Climate Change*[240]

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[236] PEW CTR. ON GLOBAL CLIMATE CHANGE, GETTING AHEAD OF THE CURVE: CORPORATE STRATEGIES THAT ADDRESS CLIMATE CHANGE 1 (2006), *available at* http://www.pewclimate.org/docUploads/Synthesis_Report_CorpStrategies.pdf.

[237] *Id*. at 55.

[238] EDWARD M. KERSCHNER & MICHAEL GERAGHTY, CITIGROUP GLOBAL MARKETS, CLIMATIC CONSEQUENCES 68 (2007), *available at* http://sefi.unep.org/fileadmin/media/sefi/docs/industry_reports/Citigroup_2007.pdf.

[239] Adam Shell & Matt Krantz, *Global Warming a Hot Spot for Investors*, USA TODAY, Feb. 28, 2007, *available at* http://www.usatoday.com/money/markets/2007-02-28-global-warming_N.htm.

[240] MERRILL LYNCH, ENERGY SECURITY & CLIMATE CHANGE: INVESTING IN THE CLEAN CAR REVOLUTION 4 (2005), *available at* http://www.asria.org/ref/library/csrguidelines/lib/050616WRI_Report.pdf.

- "The pace of a firm's adaptation to climate change and related policy is thus likely to prove to be another of the forces that will influence whether, over the next several years, any given firm survives and prospers; or withers and, quite possibly, dies."
  – Lehman Brothers Report, *The Business of Climate Change*[241]

- "[E]nvironmental regulation will play an increasingly larger role in business in the coming years . . . . [C]ompanies that are knowledgeable about the issues, and, therefore, well-prepared, will find it easier to maintain profitability as they will be in a much better position to bid for new projects and sustain their business under the new legislation. In turn, these companies may also be able to gain market share from businesses that are less prepared and compliant."
  – J.P. Morgan Report, *Air Pollution: Business Risk or Competitive Advantage*[242]

- "Climate change is widely recognized as the most significant environmental issue facing the global economy . . . . Investors need to understand how their investments are contributing to the problem, and also how they could be impacted by a changing climate."
  – Henderson Global Investors Report, *The Carbon 100*[243]

- "(Global warming) started out as an environmental issue, but it crossed over to become a quite fundamental financial and economic issue."
  – Nick Robbins, Head of Socially Responsible Investment Funds, Henderson Global Investors[244]

- "We see a number of catalysts that will create investment opportunities related to reducing greenhouse gases and mitigating exposure to climate change risk."
  – Peter Suozzo, Director of Sustainable Investment Research for North America, Citigroup[245]

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[241] JOHN LLEWELLYN, LEHMAN BROTHERS, THE BUSINESS OF CLIMATE CHANGE: CHALLENGES AND OPPORTUNITIES 4 (2007), *available at* http://www.lehman.com/press/pdf_2007/TheBusinessOfClimateChange.pdf.
[242] JP MORGAN, AIR POLLUTION: BUSINESS RISK OR COMPETITIVE ADVANTAGE (2007), *available at* http://www.jpmorgan.com/pages/jpmorgan/investbk/solutions/research/climatechange.
[243] HENDERSON GLOBAL INVESTORS, THE CARBON 100 at 3 (2005), *available at* http://www.henderson.com/global_includes/pdf/sri/SRICarbon100Report.pdf.
[244] Joanna Glasner, *Investors Bet on Global Warming*, WIRED, Nov. 22, 2005, *available at* http://www.wired.com/techbiz/startups/news/2005/11/69370.
[245] Jody Yen, *Global Warming Goes to Wall Street*, FORBES.COM, Jun. 20, 2006, *available at* http://www.forbes.com/businessinthebeltway/2006/06/19/green-business-investing-cz_jy_0619sf.html.

- "Any insurance company that is not focusing on climate change and related possible damage is not being realistic in looking at their future profitability. As an investor, a lack of disclosure always troubles me."
  – Richard Moore, North Carolina State Treasurer[246]
- "Shareholders must understand actions taken to manage GHG and climate risks."
  – Bob Page, Vice President of Sustainable Development, TransAlta[247]
- "[C]limate change is on the agenda for governments, regulators, consumers and businesses and this is creating some major risks, but also opportunities."
  –Mike Scott, *Financial Services – Banking on Climate Change's Consequences* [248]

II. Climate Change Is a Business Reality

"Companies should take action now to define their global climate-related strategy, set GHG reduction goals and implement GHG reduction activities, not just for environmental reasons, but also for competitive advantage." – Ron Meissen, Senior Director of Environment, Health and Safety Engineering at Baxter International[249]	"Companies are becoming increasingly aware that climate is closely tied to profits." – Felix Carabello, Director of Alternative Investment Products, Chicago Mercantile Exchange[250]

- "To me, [climate change] is the defining business issue of our generation."

[246] EVAN MILLS & EUGENE LECOMTE, CERES, FROM RISK TO OPPORTUNITY: HOW INSURERS CAN PROACTIVELY AND PROFITABLY MANAGE CLIMATE CHANGE 29 (2006), *available at* http://www.ceres.org/pub/publication.php?pid=0.
[247] PEW CTR. ON GLOBAL CLIMATE CHANGE, *supra* note 236, at 55.
[248] Mike Scott, *Financial Services – Banking on Climate Change's Consequences,* CLIMATE CHANGE CORP.COM, June 18, 2007, http://www.climatechangecorp.com/content.asp?ContentID=4852.
[249] PEW CTR. ON GLOBAL CLIMATE CHANGE, *supra* note 236, at 6.
[250] Shell & Krantz, *supra* note 239.

– David Crane, Chief Executive Officer, NGR Energy[251]

- "[A]s many companies have already learned, acting on [climate change] is simply good business. Reducing our use of energy reduces costs. Inviting our employees to be active on this issue helps us recruit and retain the world's best. For us, as a media company-- this is a chance to deepen our relationships with our viewers, readers, and web users. The [climate] initiative we are launching today will involve every business, every function. It's not only for our facilities managers or our fleet directors-- it's about how we recruit new employees, how we develop relationships with advertisers and how we design movie sets. This is about changing the DNA of our business to re-imagine how we look at energy."
  – Rupert Murdoch, Chairman and CEO, News Corporation[252]

- "By conserving energy, we not only help the environment, but also our bottom line, as greater energy efficiency means lower costs. By investing in renewable energy, we displace some of our electricity demand during the times of day when it is most expensive, while helping green industries grow and reducing the cost of these emerging technologies. And by creating web-based products and services, we connect individuals like you with information that helps raise environmental awareness or avoids the need for you taking that trip to the store or sending that paper in the mail."
  – Google statement on climate change[253]

- "Climate change is shaping global markets and global consumer attitudes. There will be winners and losers. Companies who seize the opportunities, who adopt environmental, social and governance policies and who evolve, innovate and respond to these challenges are likely to be the pioneers and industry leaders of the 21st century."
  – Achim Steiner, Executive Director, UNEP[254]

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[251] John Donnelly, *Unlikely Allies Advance Global Warming Policy*, BOSTON GLOBE, Aug. 22, 2007, *available at* http://www.boston.com/news/nation/washington/articles/2007/08/22/unlikely_allies_advance_global_warming_policy/.

[252] Rupert Murdoch, Chairman and Chief Executive Officer, News Corp., Remarks at Hudson Theatre, New York City (May 9, 2007), *available at* http://www.newscorp.com/energy/full_speech.html.

[253] Google, A Clean Energy Future @ Google, http://www.google.com/corporate/green/energy/. Google has committed to going carbon neutral by 2008.

[254] Press Release, World Bus. Council for Sustainable Dev., Business Leaders Call for Climate Action (July 6, 2007), *available at* http://www.wbcsd.ch/plugins/DocSearch/details.asp?type=DocDet&ObjectId=MjU0MTQ.

- "As a major global reinsurer, Swiss Re is committed to taking a leading role in the climate debate. We identified climate change as an emerging risk some 20 years ago, and the concern has since evolved into an important component of the company's long-term risk management strategy. Our actions are based on the premise that it is in the interest of our shareholders, clients and employees, the wider stakeholder community and society in general to tackle this issue . . . . Climate change has been designated a Swiss Re Top Topic, which means that it is recognized as an issue of Group-wide strategic importance."
  – Swiss Re statement on climate change[255]

- "Climate change is probably one of the best examples of where long-term risk planning is essential to mitigate some potentially irreversible long-term effects."
  – Brian Storms, CEO, Marsh, Inc.[256]

- "Our shareholders wanted to better understand the opportunities and risks that the climate change issue represented to their investment in Exelon, so we added a Global Climate Change Section to our 2004 10-K."
  – Helen Howes, Vice President of Environment, Health and Safety, Exelon[257]

- "We have long identified climate change as a serious environmental issue, and shareholders are increasingly asking about the risks as well as the opportunities associated with it."
  – Bill Ford, Chairman and CEO, Ford Motor Company[258]

- "The larger challenge that we face is, are we somehow in a period in which global warming is for real and we never have a cold January again. That's the single biggest risk to our industry."
  – Aubrey McClendon, CEO, Chesapeake Energy[259]

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[255] Swiss Re, Our Position and Objectives, http://www.swissre.com/pws/about%20us/knowledge_expertise/top%20topics/our%20position%20and%20objectives.html?contentIDR=c21767004561734fb900fb2ee2bd2155&useDefaultText=0&useDefaultDesc=0.

[256] PEW CTR. ON GLOBAL CLIMATE CHANGE, CLIMATE CHANGE 101: BUSINESS SOLUTIONS 1 (2006), *available at* http://www.pewclimate.org/docUploads/1114_BusinessFinal.pdf.

[257] PEW CTR. ON GLOBAL CLIMATE CHANGE, *supra* note 236, at 54.

[258] Nat'l Envtl. Trust, U.S. Business Leaders on Global Warming, http://www.net.org/warming/docs/Business_Leadership_Quotes.pdf.

[259] Audio recording: 2006 OGIS West Investment Symposium, held by the Indep. Petroleum Ass'n of Am. (Oct. 3, 2006), *available at* http://www.investorcalendar.com/IC/CEPage.asp?ID=108780&CID=

- "Shell was one of the first energy companies to acknowledge the threat of climate change and to call for action by governments, industries and energy users . . . ."
  – John Hofmeister, U.S. Country Chair and President, Shell Oil Company[260]

III. Legislation to Mitigate Climate Change Is Inevitable

"The dam is broken . . . . It's inevitable that the federal government will have to come out and set a level playing field throughout the country." – Chris Walker, Head of Greenhouse Gas Risk Solutions Unit, Swiss Re[261]	"The growing consensus is that national domestic regulation is a matter of when, not if." – Paul Hanrahan, President and CEO, AES Corporation[262]

- "[G]overnment mandates will be required."
  – Yolanda Pagano, Director of Climate Strategy and Programs, Exelon[263]
- "Congress has changed, people realize something is coming down the pike in terms of federal legislation . . . ."
  – Douglas Fisher, utilities analyst, AG Edwards & Sons[264]
- "[W]e must include all voices to ensure that energy policies lower emissions and sustain global economic development."
  – Jim Owens, Chairman and CEO, Caterpillar Inc.[265]

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[260] U.S. Climate Action P'ship (USCAP), USCAP Statements, http://www.us-cap.org/media/quotes.asp.
[261] Nat'l Envtl. Trust, *supra* note 258.
[262] Press Release, AES, AES Outlines Support for National Instead of Regional CO_2 Cap and Trade Legislation (Jan. 17, 2007), *available at* http://newsroom.aes.com/phoenix.zhtml?c=202639&p=irol-newsArticle&ID=951301&highlight=.
[263] PEW CTR. ON GLOBAL CLIMATE CHANGE, *supra* note 236, at 47.
[264] David R. Baker & Zachary Coile et al., *Lobbying Effort Signals Corporate Climate Change*, S.F. CHRON., Jan. 23, 2007, *available at* http://sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/01/23/CEOCLIMATE.TMP.
[265] USCAP, *supra* note 260.

- "We see a global system of emissions trading as inevitable."

  – Steve Lennon, Chair, Environment and Energy Commission, International Chamber of Commerce[266]

- "Technologies will emerge when CO_2 has a price signal, and that market signal will be created by regulation."

  – Kevin Leahy, Managing Director of Climate Policy, Cinergy[267]

IV. Climate Change Must Be Addressed

"We know we must address climate change . . . . [T]here is no other option." – Alain Belda, Chairman and CEO, Alcoa[268] "The unique challenge of climate change is that it requires action now . . . ." – Jeffry Sterba, Chairman, President and CEO, PNM Resources[269]	"Climate change is a serious issue that has to be addressed through concrete action." – Chad Holliday, Chairman and CEO, DuPont[270]

- "It is critical that business, government and non-governmental organizations come together to develop efficient and effective approaches to addressing environmental impacts of greenhouse gas emissions and our mutual energy future."

  – Indra K. Nooyi, Chairman and CEO, PepsiCo[271]

- "[C]limate change is a serious problem that must be addressed."

  – Martin Sullivan, President and CEO, AIG[272]

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[266] Nat'l Envtl. Trust, *supra* note 258.
[267] PEW CTR. ON GLOBAL CLIMATE CHANGE, *supra* note 236, at 47.
[268] USCAP, *supra* note 260.
[269] *Id.*
[270] *Id.*
[271] *Id.*
[272] *Id.*

- "GM is very pleased to join USCAP in proactively addressing the concerns posed by climate change."
  – Rick Wagoner, Chairman and CEO, General Motors Corp.[273]

- "Climate change is real and the most urgent environmental issue our society faces."
  – Andrew Liveris, Chairman and CEO, The Dow Chemical Company[274]

- "We support the goal of reducing greenhouse gas emissions to mitigate the expected adverse effects of climate change."
  – William C. Weldon, Chairman and CEO, Johnson & Johnson[275]

- "[A]ction to address these emissions sooner rather than later will lower the costs and difficulties of mitigation and innovation."
  – Robert Lane, Chairman and CEO, Deere & Company[276]

- "[T]he sooner we act the better it will be for our environment, customers and the economy."
  – Jim Rogers, Chairman, President and CEO, Duke Energy[277]

- "[W]e are committed to tackling the challenge of global climate change."
  – George Nolen, President and CEO, Siemens Corporation.[278]

- "We believe climate change is one of the most significant environmental challenges of the 21st century . . . . [V]oluntary action alone cannot solve the climate change problem."
  – Goldman Sachs Environmental Policy Framework[279]

- "No other country bears a greater responsibility – or possesses a greater capacity – to lead the global response on this issue."
  – Peter A. Darbee, Chairman of the Board, CEO and President, PG&E Corporation[280]

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[273] *Id.*
[274] *Id.*
[275] *Id.*
[276] *Id.*
[277] *Id.*
[278] *Id.*
[279] GOLDMAN SACHS, GOLDMAN SACHS ENVIRONMENTAL POLICY FRAMEWORK 1 (undated), *available at* http://www2.goldmansachs.com/our_firm/our_culture/corporate_citizenship/environmental_policy_framework/docs/EnvironmentalPolicyFramework.pdf.
[280] USCAP, *supra* note 260.

- "We don't have a lot more time to deal with climate change . . . ."
  – Henry Paulson, then-Chairman, Goldman Sachs[281]

- "BHP Billiton has recognized that our company, as well as society generally, must make real behavioral changes and accelerate technological progress if we are to achieve a meaningful reduction in energy use and greenhouse gas emissions."
  – Chip Goodyear, CEO, BHP Billiton[282]

- "We have to deal with greenhouse gases. From Shell's point of view, the debate is over. When 98 percent of scientists agree, who is Shell to say, 'Let's debate the science'?"
  – John Hofmeister, President, Shell Oil Co.[283]

- "We support urgent but informed action to stabilize greenhouse gas (GHG) concentrations by achieving sustainable long-term emission reductions at the lowest possible cost."[284]
  – BP P.L.C. position on climate change

- "Climate change poses clear, catastrophic threats. We may not agree on the extent, but we certainly can't afford the risk of inaction."
  – Rupert Murdoch, Chairman and Chief Executive Officer, News Corporation[285]

- "In the distribution of possible future outcomes of global warming, there is a significant tail representing very serious consequences. It is the prudent approach – a common practice in insurance and issues of financial stability – which requires us to take action today to mitigate global warming and to adapt to its consequences."
  – Jacques Aigrain, Chief Executive Office, Swiss Re[286]

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[281] Envtl. & Energy Study Institute, *First Meeting of Parties to Kyoto Protocol Underway in Montreal*, CLIMATE CHANGE NEWS, Dec. 2, 2005, http://www.eesi.org/publications/Newsletters/CCNews/12.2.05%20CCNews.htm.
[282] BHP Billiton, Ltd., *BHP Billiton Launches Revised Climate Change Policy*, CSRWIRE, June 19, 2007, *available at* http://www.csrwire.com/News/8939.html.
[283] Steven Mufson & Juliet Eilperin, *Energy Firms Come to Terms with Climate Change*, WASH. POST, Nov. 25, 2006, *available at* http://www.washingtonpost.com/wp-dyn/content/article/2006/11/24/AR2006112401361.html.
[284] BP, Climate Change - Our Position, http://www.bp.com/sectiongenericarticle.do?categoryId=9015582&contentId=7028604.
[285] Murdoch, *supra* note 252.
[286] Swiss Re, *supra* note 255.

V. Federal Legislation Concerning Climate Change Is Desirable

Thirty-three U.S. businesses and environmental groups have joined together to form the U.S. Climate Action Partnership, that have come together "to call on the federal government to enact legislation requiring significant reductions of greenhouse gas emissions."[287] The joint statement pledges that the corporations will "work with the President, the Congress and all other stakeholders to enact an environmentally effective, economically sustainable, and fair climate change program consistent with our principles at the earliest practicable date"[288] and recommends "mandatory" regulations "to reduce greenhouse gas emissions."[289]

"[T]he time has come to act – to take steps as a nation to reduce the carbon intensity of our economy . . . any actions must be mandatory, economy-wide and federal in scope." – Paul Anderson, CEO, Duke Energy Corp.[290]	"We need a uniform and predictable system. . . . It needs to be a federal system." – Ken Cohen, Vice-President of Public Affairs, Exxon Mobil[291]

- "[State level regulation] would be a huge misdirection of resources and much less would be achieved if we are subjected to a balkanized set of standards from 50 different sources."
  – Tom Catania, Vice President of Government Relations, Whirlpool[292]

[287] U.S. Climate Action P'ship (USCAP), http://www.us-cap.org. Members of USCAP include Alcan Inc., Alcoa, American International Group, Inc. (AIG), Boston Scientific Corporation, BP, America Inc., Caterpillar Inc., Chrysler LLC, ConocoPhillips, Deere & Company, The Dow Chemical Company, Duke Energy, DuPont, Environmental Defense, Exelon Corporation, Ford Motor Company, FPL Group, Inc., General Electric, General Motors Corp., Johnson & Johnson, Marsh, Inc., National Wildlife Federation, Natural Resources Defense Council, The Nature Conservancy, NRG Energy, Inc., PepsiCo, Pew Center on Global Climate Change, PG&E Corporation, PNM Resources, Rio Tinto, Shell, Siemens Corporation, World Resources Institute, Xerox Corporation.
[288] U.S. CLIMATE ACTION P'SHIP, A CALL FOR ACTION 11 (2007), *available at* http://www.us-cap.org/USCAPCallForAction.pdf.
[289] USCAP, *supra* note 260.
[290] Nat'l Envtl. Trust, *supra* note 258.
[291] *Everybody's Green Now: How America's Big Companies Got Environmentalism*, ECONOMIST, May 31, 2007, *available at* http://www.economist.com/surveys/PrinterFriendly.cfm?story_id=9217982.
[292] PEW CTR. ON GLOBAL CLIMATE CHANGE, *supra* note 236, at 50.

- "[W]e support [the] goal of a mandatory national regulatory framework."
  – James J. Mulva, Chairman and CEO, ConocoPhillips[293]

- "We must . . . create energy policy that is integrated, coherent and clear. . . ."
  – Jeffrey Immelt, Chairman of the Board and CEO, General Electric[294]

- "It is in the interest of society and business to reduce the uncertainty and increase the predictability of policy frameworks and market conditions around the issue of climate change."
  – Bill Ford, CEO, Ford Motor Co.[295]

- "Alcan is . . . committed to bringing about legislative action on climate change."
  – Richard B. Evans, President and CEO, Alcan, Inc.[296]

- "The sooner we act, the more options we have for solutions, the less costly they will be and the fewer uncertainties we will face with the climate."
  –Peter A. Darbee, Chairman of the Board, CEO and President, PG&E Corporation [297]

- "Give us a date, tell us how much we need to cut, give us the flexibility to meet the goals, and we'll get it done."
  – Wayne H. Brunetti, CEO and Chairman, Xcel Energy[298]

- "[W]e will campaign for public policies designed to cut emissions to the levels required to keep our climate system stable. We support energy efficiency standards that accelerate the deployment of energy-efficient technologies throughout the world, specific targets to increase renewable energy supplies on the grid, public support for research and development aimed at developing and commercializing low-carbon technologies, and mandatory emissions limits that put a price on carbon."
  – Google statement on climate change[299]

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[293] USCAP, *supra* note 260.
[294] *Id*.
[295] *Id*.
[296] *Id*.
[297] David R. Baker & Zachary Coile, *Lobbying Effort Signals Corporate Climate Change,* S. F. CHRON., Jan 23, 2007, at D1, *available at* http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/01/23/BUGO0NN3EC1.DTL&feed=rss.news
[298] PEW CTR. ON GLOBAL CLIMATE CHANGE, *supra* note 256, at 7.
[299] Google, *supra* note 253.

KEY ELEMENTS OF PROPOSED SEC GUIDANCE ON CLIMATE DISCLOSURE

The Commission should issue an interpretive release clarifying registrants' obligation under existing law and regulations to assess the risks they face in connection with climate change and to disclose those risks that are material. This guidance should set forth the process by which a registrant should make this assessment and the types of information most likely to be relevant to the assessment, and should direct registrants to disclose the following risks if they are material:

1. Physical risks associated with climate change;
2. Financial risks associated with present or probable regulation of greenhouse gas emissions; and
3. Legal proceedings relating to climate change.

Basis for Interpretive Release

As explained in our petition, climate change has become increasingly important to the operations and financial condition of many registrants. Developments associated with global warming, including physical changes associated with a warming climate and regulatory measures adopted to mitigate greenhouse gas emissions, can affect companies in a variety of ways, such as by posing risks to physical assets of the registrant or its customers or suppliers, introducing new regulatory compliance costs and obligations, increasing the costs of important inputs, and opening up opportunities for new products and services. Many investors are now seeking information concerning companies' response to the physical changes, regulatory developments, and new opportunities associated with climate change.

While some registrants have been providing information on the impacts of climate change in their periodic filings, disclosures remain inconsistent and in many cases incomplete. In particular, corporate disclosure of the risks posed by climate change is lacking, even for companies that do address the impact of climate change and their own emissions. The uneven state of disclosure of climate information, the pervasive emergence of global warming as a significant influence upon the economy, the numerous and complex ways in which it may bear materially on registrants' financial condition, and the widespread adoption of greenhouse gas

regulations in recent years, all indicate a need for guidance concerning registrants' disclosure obligations with respect to climate issues.

Climate-related risks that constitute material contingent liabilities must be expressed on a company's balance sheet or in footnotes to financial statements. *See* Statement of Financial Accounting Standards No. 5, *Accounting for Contingencies*. Our petition sets forth examples of climate risk that may require such treatment. *See* Petition Part 3.

Whether or not climate risk can be estimated with a degree of certainty warranting its classification as a material contingent liability, registrants have obligations under various provisions of Regulation S-K to disclose in narrative form material information regarding the physical risks associated with climate change and with governmental regulations intended to limit emissions of greenhouse gases. Registrants should carefully examine the potential implications of climate change and present or probable regulation of greenhouse gas emissions for their own operations and financial condition. Whether disclosure is required will depend, as in other areas, upon an informed judgment about whether the information is material. In addressing that question, companies should not limit their consideration merely to particular projects and sites, but should also consider whether the overall degree of risk posed by climate change is material to the corporation's long-term ability to create and maintain value for shareholders.

Several provisions of Regulation S-K have particular importance when considering the impact of climate change and related developments. As part of the narrative description of its business under Item 101, a registrant must disclose any material effects of compliance with Federal, State and local laws regulating the discharge of materials into the environment or otherwise relating to the protection of the environment may have upon the registrant's capital expenditures, earnings and competitive position. 17 C.F.R. § 229.101(c)(xii). Item 103 requires disclosures concerning certain judicial or administrative proceedings arising under laws intended to protect the environment. 17 C.F.R. § 229.103 & Instruction 5. Under Item 303, Management's Discussion and Analysis of Financial Condition and Results of Operations must include discussions of factors bearing materially on the company's financial condition and business operations, including an identification of known trends or uncertainties expected to have a material impact on the registrant's liquidity, capital resources, net sales or revenues or income from continuing operations. 17 C.F.R. § 229.303(a).

As the Commission noted in its recent guidance on MD&A disclosure, companies now have "access to and use substantially more detailed and timely information about their financial conditions and operating performance than they did when our MD&A requirements initially were introduced . . . . Some of this information is itself non-financial in nature, but bears on companies' financial condition and operating performance."[300] Information bearing on the consequences of climate change and greenhouse gas regulation for a registrant's operations and financial condition is an important part of that expanding body of information, and registrants should review it carefully and make disclosures where appropriate.

As the MD&A release observed, "in identifying, discussing and analyzing known material trends and uncertainties, companies are expected to consider all relevant information, even if that information is not required to be disclosed."[301] In assessing the impact of climate change and greenhouse gas regulation on their financial condition and operations, registrants should examine any corporate policies or governance structures that have been established to address climate issues, and review the company's institutional mechanisms for assembling and analyzing information about the various ways in which climate change can affect the company. Where the company has not established internal mechanisms for assembling and assessing climate information, it may need to do so in order to exercise informed judgments concerning the nature and materiality of climate-related risk.

Process for Assessment of Material Climate Risks

To assess potential financial risks associated with present and probable regulatory requirements concerning greenhouse gases, registrants should determine their current and projected emissions levels. Companies should tabulate their current greenhouse gas emissions, including direct emissions from their own operations and emissions from purchased electricity and purchased products and services. They should estimate their past greenhouse gas emissions to the extent necessary to assess significant trends in their emissions levels, and should also project their future greenhouse gas emissions, as necessary to evaluate the costs they are likely to face from greenhouse gas regulation.

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[300] Interpretation: Commission Guidance Regarding Management's Discussion and Analysis of Financial Condition and Results of Operations, Securities Act Release No. 8350, Exchange Act Release No. 48,960, 68 Fed. Reg. 75,056 (Dec. 29, 2003).
[301] *Id.*

Well established tools such as the Greenhouse Gas Protocol exist to aid in the calculation of greenhouse gas emissions.

Factors to Evaluate in Assessing the Materiality of Climate Risks

While disclosure obligations will depend upon individual registrants' particular circumstances, and assessment of the materiality of climate risks, the following kinds of information should be considered and may be subject to disclosure obligations under existing Commission regulations.

Physical Risks Associated with Climate Change

A registrant should review and evaluate the consequences that physical risks and effects associated with climate change may have for the registrant's business and operations, including its personnel, physical assets, supply chain, and distribution chain, and must disclose information on those consequences when they are material to corporate performance.

Examples of such physical effects may include the impact of changes in weather patterns, such as increases in the storm intensity, sea-level rise, melting of permafrost, and temperature extremes, on facilities or operations; effects of climate change upon land, water availability or quality, or other natural resources on which the registrant's business depends; damage to facilities or decreased efficiency of equipment; or effects of changes in temperature on the health of the workforce.

For some registrants, financial risks associated with climate change may arise from physical risks to entities other than the registrant itself. For example, climate change-related physical changes and hazards to coastal property may pose a material credit risks for banks whose borrowers are located in at-risk areas. Climate change may also affect a registrant's supply chain in a variety of ways: climatic changes may diminish supplies of important inputs, physical damage to suppliers' infrastructure may cause costly interruptions in deliveries, and physical changes associated with climate change may decrease consumer demand for products or services. Registrants should evaluate whether they are subject to such risks and disclose any material information related to them. Physical impacts associated with climate change will vary widely depending upon companies' location and the nature of their facilities and operations, but

all registrants should review their exposure to such risks and, where the risks are material, must disclose them.

Financial Risks Associated with Greenhouse Gas Regulation

For many registrants, present or probable greenhouse gas regulation has material effects warranting disclosure. When compliance with any international, federal, state, or local laws and regulations concerning climate, including laws regulating greenhouse gas emissions, may have a material effect on the capital expenditures, earnings, and competitive position of the registrant and its subsidiaries, such laws should be identified and their effect discussed.

In conformity with Item 303 of Regulation S-K, registrants must describe any known trends or uncertainties in connection with the impact of climate change or greenhouse gas regulation that they reasonably expect will have a material favorable or unfavorable impact on net sales or revenues or income from continuing operations. When costs associated with compliance with such laws, or penalties for noncompliance, are material to a registrant's financial condition or operations, the registrant's disclosures must include an analysis of any such material effects, including a discussion of the financial risks and opportunities afforded by such regulations.

When a registrant concludes that legislative and regulatory proposals, although not yet enacted into law, are reasonably likely to be enacted and that such proposals, if adopted, would have a material effect on the company’s financial condition or operations, the registrant should identify and discuss the proposals. The registrant should describe and evaluate realistic alternative regulatory scenarios.

Greenhouse gas regulation may have a material effect upon a registrant that is not itself directly subject to the regulation, for example by increasing the costs or decreasing the supply of some product or service on which the registrant's business depends, or increasing or decreasing demand for the registrant's products or services. Where material, such indirect effects should be identified and analyzed.

Legal Proceedings Relating to Climate Change

Under Item 103, registrants must describe any pending judicial or administrative proceeding other than routine business litigation, arising under any Federal, State or local laws, if the proceeding is considered material to the business or financial condition of the registrant; or involves a claim for damages exceeding 10 percent of the assets of the registrant and its subsidiaries on a consolidated basis; or a government authority is a party to such proceeding(s) and the proceeding(s) involves potential monetary sanctions above $100,000. Registrants must disclose any proceedings arising under laws relating to climate change, including those regulating emissions of greenhouse gases, when the proceedings meet the Item 103 criteria.