

Investor Guide to Climate Risk

*Action Plan and Resource for Plan Sponsors,
Fund Managers and Corporations*

A Publication of the Investor Network on Climate Risk

Commissioned by



C E R E S

July 2004

CERES commissioned this guide from the Investor Responsibility Research Center. CERES is a coalition of investor, environmental, labor and public interest groups working together to increase corporate environmental responsibility worldwide. IRRC is an independent research firm that is the leading source of high quality, impartial information on corporate governance and social responsibility issues affecting investors and corporations.

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Authored by

Douglas G. Cogan
Investor Responsibility Research Center



IRRRC

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Investor Guide to Climate Risk: 10 Key Steps

ASSESSMENT

Expert Advice	Find experts to raise awareness, assess climate risks and convey fiduciary duties to plan beneficiaries, investment consultants, fund managers and portfolio companies.
Risk Assessment	Assess physical and policy risks of climate change in evaluations of companies, industry sectors, investment portfolios and property holdings.
Networking with Others	Join the Investor Network on Climate Risk and engage with others to promote climate risk assessments, greenhouse gas emissions disclosure and responsible public policy.

DISCLOSURE

Public Statement	Declare that climate change poses fiduciary and financial risks to be addressed through research, corporate engagement and long-term investment strategies.
Public Disclosure	State methods to assess and address climate risk in plan documents and require companies to identify material risks of climate change in securities filings.
Emissions Accounting	Ask companies to disclose emissions based on the Greenhouse Gas Protocol, and to account for GHG emissions from products and property holdings.
Stakeholder Dialogue	Adopt proxy voting guidelines to urge corporate action on climate change, and maintain an active dialogue with beneficiaries, fund managers and companies.

SOLUTIONS

Investment Strategy	Match long-term objectives with reduced climate risk exposure to optimize investment returns, and engage fund managers and companies to adopt best practices.
Clean Energy	Direct investment capital into emerging clean energy technologies and promote energy efficient products and building practices.
Government Action	Support government actions to promote investor certainty, including mandatory policies to achieve absolute reductions in greenhouse gas emissions.

FOREWORD

Global climate change poses major risks and investment opportunities for shareholders and companies. The risks come primarily in two forms—physical risks and policy risks.

- Weather-related catastrophes topped \$55 billion in 2003.¹ As global warming continues, the annual toll could reach \$150 billion in the next 10 years—and \$300 billion a year by 2050.² The French insurance company AXA estimates that about 20 percent of global GDP is now affected by climatic events and that “climatic risk in numerous branches of industry is more important than the risk of interest rates or foreign exchange risk.”³
- Governments around the world, and regionally in the United States, are enacting policies to reduce emissions of carbon dioxide and other greenhouse gases (GHGs). Regulation of GHGs poses an additional financial risk, especially in sectors with significant GHG emissions, such as electricity, oil and gas, and automobiles.

The investment risks and opportunities posed by climate change are vast. Recent studies have shown:

- Modest greenhouse gas controls could reduce the market capitalization of many coal-dependent U.S. electric utilities by 5 to 10 percent. Under a more stringent Kyoto regulatory scenario, such companies could face a 10 to 35 percent reduction in market value.⁴
- Market capitalization of major oil companies could decline by as much as 6 percent as a result of CO₂ emission constraints, while companies with large reserves of natural gas stand to benefit.⁵
- Among auto companies, costs of compliance with climate policies could vary by a factor of 25, adding a new competitive dimension to the industry that could cause some companies’ earnings to increase by up to 8 percent while others fall by as much as 10 percent.⁶

Fundamental changes must be made in the way we use and produce energy if we are to limit the downside risks posed by climate change. Pension fund and endowment trustees, with their long-term investment horizon, have a particular duty to address this challenge and fill the “governance gap” in investment decisions affecting climate change.⁷ If these trustees do not look out for the lasting economic and environmental interests of their beneficiaries, short-term consumer and executive decisions will rule the day, locking in “business as usual” investment strategies that extend and compound the damage.

That is why state and city treasurers, labor pension fund leaders, and foundation leaders have formed the Investor Network on Climate Risk (INCR), for which CERES serves as Secretariat. The INCR issued a 10-point “Call for Action” at the Institutional Investor Summit on Climate Risk at the United Nations Headquarters on November 21, 2003.⁸ It urges pension and endowment trustees, fund managers, securities analysts, corporate directors and government policymakers to increase their oversight and scrutiny of the investment implications of climate change.

To implement the INCR’s Call for Action, CERES commissioned the Investor Responsibility Research Center to identify specific steps and resources available to investors. This *Investor Guide to Climate Risk*, authored by Douglas G. Cogan, identifies appropriate roles for plan sponsors and fund managers as well as the companies in which they invest. The Guide is intended to show how each of these entities can pursue independent initiatives. More importantly, it shows how they can link their efforts to reduce the financial risks and seize the investment opportunities posed by climate change. Readers should view the Guide with an eye toward such linkages.

This Guide has been posted on the INCR website (www.incr.com) and will be updated periodically. Its primary objectives are to:

- define the fiduciary duty to assess climate risk on behalf of shareholders and beneficiaries
- identify key business and investment risks and opportunities posed by climate change
- develop prudent investment and corporate response strategies and solutions
- support a government role to reduce investor uncertainty through a cap on GHG emissions

The Guide’s intent is to help lay the groundwork and build a coordinated approach to mitigating climate risk. On an issue as complex as this, however, the Guide is merely a starting point for a sustained effort. I welcome your comments, suggestions and ideas as we work to move this process forward.

Mindy S. Lubber
Executive Director, CERES
Secretariat for the Investor Network on Climate Risk

How To Use This Guide

The Investor Guide to Climate Risk: Action Plan and Resource for Plan Sponsors, Fund Managers and Corporations is a comprehensive guide to actions individuals can take to address climate risk in their organizations. It is designed for online use to allow users to link to in-depth research and organizations that can assist them. This printed version of the Guide is a facsimile of the online version that will be updated periodically. Please view the Guide online at www.ceres.org and www.incr.com.

Who Should Use The Guide

The Guide is intended for broad application in the investment and corporate communities. Each page of the Guide is divided into three user categories:

- **Plan Sponsors** column is designed for pension plans and endowments and their investment consultants.
- **Fund Managers** column is intended for “buy side” investment managers and “sell side” brokers and securities analysts.
- **Corporations** column is designed for boards of directors, CEOs and top executives. (Managers of corporate retirement plans should also consult the Plan Sponsors column.)

Ten Key Steps

The Guide identifies three core actions to address climate risk – assessment, disclosure, and solutions – as well as ten key steps:

- **Assessment:** (1) seek expert advice, (2) conduct risk assessments, and (3) network with others;
- **Disclosure:** (4) issue a public statement, (5) make public disclosure of risks, (6) account for emissions, and (7) maintain stakeholder dialogue;
- **Solutions:** (8) devise investment strategy, (9) invest in clean energy, and (10) support government action.

The table appearing on the next page summarizes the actions available to Plan Sponsors, Fund Managers and Corporations. The Guide pages that follow provide a more detailed examination of each of the ten key steps, in the order they are listed above. The format is designed so users in one category can see how their actions relate to and influence actions taken by users in other categories. By reading down the columns, one can view a complete list of actions available in a user category. Reading across the rows show how users in all three categories can interact and coordinate their efforts.

Endnotes

- 1 Munich Reinsurance, Topics geo – *Annual Review of Natural Catastrophes 2003*, February 2004.
- 2 United Nations Environment Programme, *Climate Change and the Financial Services Industry*, October 2002; and Gerhard Berz, Munich Geoscience Unit, “Insuring Against Catastrophe,” *Our Planet*, United Nations Environment Programme, February 2001.
- 3 AXA Insurance, “Answer to Carbon Disclosure Project Greenhouse Gas Emissions Questionnaire,” April 2004.
- 4 Frank Dixon and Martin Whittaker, *Valuing Corporate Environmental Performance: Innovest’s Evaluation of the Electric Utilities Industry*, New York, 1999.
- 5 Duncan Austin and Amanda Sauer, *Changing Oil: Emerging Environmental Risks and Shareholder Value in the Oil & Gas Industry*, World Resources Institute, Washington DC, 2002.
- 6 Duncan Austin, Niki Rosinski, Amanda Sauer, and Colin Le Duc, *Changing Drivers: The Impact of Climate Change on Competitiveness and Value Creation in the Automotive Industry*, World Resources Institute and Sustainable Asset Management, Washington, DC, and Zurich, Switzerland, 2003.
- 7 For more information on the “governance gap” affecting climate policy decisions, see the CERES report, *Corporate Governance and Climate Change: Making the Connection*, written by Douglas G. Cogan, Investor Responsibility Research Center, June 2003.
- 8 The initial members of INCR and signers of the 10-point “Call for Action” are California Treasurer Phil Angelides, Connecticut Treasurer Denise Nappier, Maine Treasurer Dale McCormick, New Mexico State Treasurer Robert Vigil, New York City Comptroller William Thompson, New York State Comptroller Alan Hevesi, Oregon Treasurer Randall Edwards, Vermont Treasurer Jeb Spaulding, Service Employees International Union National Industry Pension Fund Director Steve Abrecht and Communications Workers of America/ITA Negotiated Pension Plan Chairman William Boarman.

Investor Guide to Climate Risk: Action Plan and Resource for Plan Sponsors, Fund Managers and Corporations

Action	Plan Sponsors	Fund Managers	Corporations
ASSESSMENT			
Expert Advice	Select an individual or team to raise awareness, identify risks and convey fiduciary duties to beneficiaries, fund managers, consultants and securities analysts on climate change.	Select an individual or team to develop capabilities to assess climate risks and opportunities in company research, selection and portfolio management.	Select an individual or team to report to the board of directors and CEO on climate change to ensure that the company makes responsible and informed capital investment decisions.
Risk Assessment	Assess climate risk exposure in investment portfolios and property holdings.	Assess climate risk exposure in evaluations of companies and industry sectors.	Assess climate risk exposure in fixed assets, products and competitive positioning.
Networking with Others	Join the Investor Network on Climate Risk and like-minded investor coalitions to promote climate risk analysis and sound investment policy.	Join investor coalitions and engage brokerage and research firms to promote climate risk analysis and sound investment policy.	Enter partnerships and collaborations to promote clean energy, greenhouse gas (GHG) emissions trading and responsible climate policy.
DISCLOSURE			
Public Statement	Declare that climate change poses a fiduciary risk to be addressed through sound investments and property management, proxy voting and corporate engagement.	Declare that climate change poses a financial risk to be addressed through research, engagement and investment strategies to maximize returns with reduced climate risk.	Declare positions by the board of directors and CEO that climate change poses a business risk to be addressed through GHG mitigation and ameliorative policies.
Public Disclosure	State institution's methods to assess and address climate risk in plan documents and declaration of investment principles.	State firm's capabilities to assess and address climate risk in investment prospectuses and in response to requests for proposals.	Identify material risks posed by climate change and GHG emissions controls in securities filings and sustainability reports.
Emissions Accounting	Ask companies to disclose emissions based on the Greenhouse Gas Protocol, and account for emissions from property holdings.	Ask companies to disclose emissions based on the Greenhouse Gas Protocol to provide comparable and verifiable emissions data.	Base emissions inventory methods, baselines and targets on the Greenhouse Gas Protocol, and make data independently verifiable.
Stakeholder Dialogue	Engage beneficiaries, fund managers and companies in dialogue, and adopt proxy voting guidelines to urge corporate action on climate change.	Ask companies about climate change strategies in analyst briefings, and vote proxies in support of company action on climate change.	Reach out to shareholders, investment analysts and public interest groups to promote an open forum and pro-active responses to climate change.
SOLUTIONS			
Investment Strategy	Seek long-term wealth creation by urging best practices among fund managers and companies.	Match fund objectives with reduced climate risk exposure to optimize investment returns.	Integrate climate policy in strategic business planning to maximize opportunities and minimize risks.
Clean Energy	Direct investment capital into clean energy technologies and promote climate friendly building practices.	Develop climate friendly investment products and analyze companies' energy use and trends.	Set goals to increase energy efficiency, purchase and/or develop clean energy and capture/offset GHG emissions.
Government Action	Support government actions to promote investor certainty, including mandatory policies to achieve absolute GHG emissions reductions.	Support government actions to promote investor certainty, including mandatory policies to achieve absolute GHG emissions reductions.	Support government actions to promote strategic planning and technology innovations, including mandatory policies to achieve absolute GHG emissions reductions.

ASSESSMENT

Seek Expert Advice

Few investment managers and securities analysts have the specialized skills or experience necessary to quantify a company's exposure to climate risk. There are, however, a growing number of authorities with expertise in the technical, policy and financial aspects of climate change. Institutional investors and corporations would be remiss in their duties if they failed to utilize these resources and develop their own in-house expertise.

Plan Sponsors	Fund Managers	Corporations
Select an individual or team to raise awareness, identify risks and convey fiduciary duties to beneficiaries, fund managers, consultants and securities analysts on climate change.	Select an individual or team to develop capabilities to assess climate risks and opportunities in company research, selection and portfolio management.	Select an individual or team to report to the board of directors and CEO on climate change to ensure that the company makes responsible and informed capital investment decisions.
<ul style="list-style-type: none"> • identify climate change as a matter of fiduciary duty • assign key staff to monitor science, financial and policy developments on climate change • have investment consultants evaluate fund manager investment capabilities and broker research on climate change and clean energy • urge credit rating agencies to assess GHG emissions data and mitigation strategies in company credit risk evaluations • consult with outside technical, policy and scientific experts • join Investor Network on Climate Risk 	<ul style="list-style-type: none"> • identify climate change as a matter of investment competence • assign key staff to monitor corporate, financial and policy developments on climate change • review literature connecting environmental performance with shareholder value, and literature connecting corporate governance and climate change • research and evaluate investment strategies to reduce climate risk exposure and promote climate friendly technologies, products and business development plans • consult with outside technical, policy and scientific experts • join Investor Network on Climate Risk 	<ul style="list-style-type: none"> • identify climate change as a matter of corporate governance • assign key staff to monitor science, technology and policy developments on climate change • create multi-departmental steering committee to coordinate and communicate climate change and clean energy strategy with board of directors and CEO • benchmark company performance relative to peers on GHG emissions, mitigation strategies, climate friendly technologies and governance oversight • consult with outside technical, policy and scientific experts (including at the board level) • join multi-stakeholder groups such as CERES

ASSESSMENT

Conduct Risk Assessment

Climate risk varies widely among companies and industry sectors. Risks include physical exposure of assets, regulatory exposure in markets with greenhouse gas controls, competitive positioning and product risks. As fiduciaries, institutional investors must understand and control their level of exposure, making this part of their overall risk management and corporate engagement process. Plan sponsors can ask investment consultants, fund managers, securities analysts and portfolio companies to conduct climate risk assessments. Companies, in turn, have a duty to disclose information as part of this assessment process.

Plan Sponsors	Fund Managers	Corporations
Assess climate risk exposure in investment portfolios and property holdings.	Assess climate risk exposure in evaluations of companies and industry sectors.	Assess climate risk exposure in fixed assets, products and competitive positioning.
<p><i>Plan sponsors should evaluate climate risk in relation to:</i></p> <ul style="list-style-type: none"> • investment time horizons and payout schedules to beneficiaries • active vs. passive management styles • rate of portfolio turnover • geographic distribution of equities in markets with GHG emissions controls (region- and country-specific) • portfolio weighting of climate risk-exposed industries (<i>see Fund Managers column</i>) <p><i>Property risk exposure includes:</i></p> <ul style="list-style-type: none"> • energy use and fuel mix for heating, cooling and electricity • building-integrated conservation and clean energy design features • energy efficient lighting and energy management systems • building age and viability of retrofit applications • proximity to coastlines, flood plains and drought-prone areas • storm and fire preparedness 	<p><i>Industries with climate policy and competitive risk exposure include:</i></p> <ul style="list-style-type: none"> • electric power • oil & gas • transportation & automobiles • clean energy/renewables • basic industries (chemicals, paper, metals, mining) • manufacturing (electrical equipment, semiconductors) • banking and diversified financials <p><i>Also compare same-sector companies based on climate risk strategies.</i></p> <p><i>Industries with physical risk exposure to climate change include:</i></p> <ul style="list-style-type: none"> • agriculture & food • forestry • fisheries • water • real estate • tourism • health care • insurance 	<p><i>Corporate asset risk exposure includes:</i></p> <ul style="list-style-type: none"> • exposure in markets with GHG emissions controls • direct GHG emissions • age and projected life of assets • energy use and fuel mix • fuel switching capabilities and retrofit applications • vulnerability of assets to power, water and other supply interruptions • proximity to coastlines, flood plains and drought-prone areas <p><i>Product risk exposure includes product comparisons of:</i></p> <ul style="list-style-type: none"> • direct and indirect GHG emissions • energy demand and fuel use • energy efficiency and clean energy design features • low-GHG product alternatives • low-GHG research & development • supply chain issues <p><i>Competitive risk exposure includes industry comparisons of:</i></p> <ul style="list-style-type: none"> • aggregate GHG emissions and emissions intensity of operations (and those of key suppliers) • ability to respond to regulatory regimes and new markets • age, projected life and geographic distribution of assets • fuel switching capabilities and flexibility in manufacturing processes • introduction of climate-friendly products and manufacturing processes • effects of climate strategy on corporate reputation, brand value, credit risk, and legal risk

ASSESSMENT

Network with Others

Institutional investors can join with their peers in the Investor Network on Climate Risk (INCR). This network promotes investor understanding of climate risk and coordinates investor engagement with companies and policymakers. INCR was founded by ten investor leaders at the Institutional Investor Summit on Climate Risk at the United Nations in November 2003. CERES is the INCR Secretariat. Other investor, governance, business and environmental coalitions and partnerships are listed below.

Plan Sponsors	Fund Managers	Corporations
<p><i>Join the Investor Network on Climate Risk and like-minded investor coalitions to promote climate risk analysis and sound investment policy.</i></p> <p><i>Climate change investor networks and coalitions include:</i></p> <ul style="list-style-type: none"> • Investor Network on Climate Risk • Carbon Disclosure Project • Institutional Investors Group on Climate Change <p><i>Other major investor networks with members addressing climate risk include:</i></p> <ul style="list-style-type: none"> • Council of Institutional Investors • Interfaith Center on Corporate Responsibility • International Corporate Governance Network • Local Authority Pension Fund Forum (U.K.) • National Association of State Treasurers • Social Investment Forum • Social Investment Organization (Canada) 	<p><i>Join investor coalitions and engage brokerage and research firms to promote climate risk analysis and sound investment policy.</i></p> <p><i>Climate change investor networks and coalitions include:</i></p> <ul style="list-style-type: none"> • Investor Network on Climate Risk • Carbon Disclosure Project • Institutional Investors Group on Climate Change <p><i>Non-profit research groups addressing investment and governance implications of climate change include:</i></p> <ul style="list-style-type: none"> • CERES • Global Reporting Initiative • United Nations Environmental Programme Finance Initiative • World Resources Institute 	<p><i>Enter partnerships and collaborations to promote clean energy, greenhouse gas (GHG) emissions trading and responsible climate policy.</i></p> <p><i>Climate change industry partnerships include:</i></p> <ul style="list-style-type: none"> • Business Council for Sustainable Energy • Business Environmental Leadership Council • Chicago Climate Exchange • Climate Leaders • World Economic Forum <p><i>Industry-NGO collaborations addressing climate change include:</i></p> <ul style="list-style-type: none"> • CERES • Environmental Defense Partnership for Climate Action • Greenhouse Gas Protocol • World Resources Institute Green Power Market Development Group • World Wildlife Fund Climate Savers

DISCLOSURE

Issue Public Statement

Investors can be very effective advocates for steering companies in a responsible direction on climate change. Institutional investors can state their views on climate risk, their intent to engage companies and vote for climate change shareholder resolutions as well as their incorporation of climate risk factors in investment plans. Plan sponsors can present this information in their statement of investment principles. Fund managers and brokerage houses can include this information in their investment prospectuses and in response to requests for proposals. Corporations can feature their responses to climate change in their annual reports, environmental reports and securities filings.

Plan Sponsors	Fund Managers	Corporations
<p><i>Declare that climate change poses a fiduciary risk to be addressed through sound investments and property management, proxy voting and corporate engagement.</i></p> <ul style="list-style-type: none"> • statement on climate change as a matter of fiduciary duty • specific funds and initiatives focused on clean energy and climate friendly companies • proxy voting guidelines and procedures for casting and reporting votes • means of engagement with plan beneficiaries, investment consultants, fund managers, brokers, property managers, companies and outside policy and scientific experts • how climate change relates to investment strategies and performance objectives 	<p><i>Declare that climate change poses a financial risk to be addressed through research, engagement and investment strategies to maximize returns with reduced climate risk.</i></p> <ul style="list-style-type: none"> • statement on climate change as a matter of investment competence • investment products, services or strategies focused on clean energy and climate friendly companies • proxy voting guidelines and procedures for implementing plan sponsor guidelines and casting and reporting votes (including broker votes) • means of engagement with plan sponsors, companies, securities analysts, credit rating agencies and outside policy and scientific experts • research methods to address climate risk in evaluations of companies, industry sectors and managed portfolios 	<p><i>Declare positions held by the board of directors and CEO that climate change poses a business risk to be addressed through GHG mitigation and ameliorative policies.</i></p> <ul style="list-style-type: none"> • board statement on climate change as a matter of corporate governance • strategic investments in clean energy and climate friendly products and services • reports and statements issued in response to shareholder requests • means of stakeholder engagement and third-party disclosure, such as through shareholder resolutions, company reports, the Global Reporting Initiative and the Carbon Disclosure Project • board and CEO statements on company's GHG control strategy, including: <ul style="list-style-type: none"> · GHG emissions baselines, targets and trends · description of GHG emissions 'footprint' that includes product end-use emissions · how climate change and GHG controls may affect company's business strategy and product development · assessment of climate change science and human activities linked to global warming · comments on domestic and international policies to control GHG emissions

DISCLOSURE

Make Public Disclosure

The failure of companies to adequately disclose climate change-related risks is a major barrier facing investors and financial analysts. Better public disclosure is at the core of a global warming shareholder campaign that began in 1990. Investors have been asking companies to disclose corporate governance responses to climate change, greenhouse gas emissions, and to conduct analyses of the likely impact on the firm of climate risk and current and proposed climate change policies. In 2004, investors have asked the Securities and Exchange Commission to clarify that climate risk information must be reported under rules that compel disclosure of trends and uncertainties that are likely to have a material impact on a company's future operations. Other voluntary initiatives for public disclosure include the Global Reporting Initiative and the Carbon Disclosure Project. European governments are at various stages of implementing mandatory corporate disclosure on social and environmental issues such as climate change.

Plan Sponsors	Fund Managers	Corporations
<i>State the institution's methods to assess and address climate risk in plan documents and declaration of investment principles.</i>	<i>State the firm's capabilities to assess and address climate risk in investment prospectuses and in response to requests for proposals.</i>	<i>Identify material risks posed by climate change and GHG emissions controls in securities filings and sustainability reports.</i>
<ul style="list-style-type: none"> • statement on climate change as a matter of fiduciary duty • assessment of climate risk in portfolio management and property holdings • inclusion of climate risk competence as a selection criterion for investment consultants, fund managers and property managers • investment strategies to reduce climate risk and optimize returns for beneficiaries • proxy voting guidelines and procedures, disclosure of votes and engagement with companies and policymakers 	<ul style="list-style-type: none"> • statement on climate change as a matter of investment competence • research methods to assess climate risk and GHG regulations in evaluations of companies, industries and managed portfolios • investment products, services or strategies focused on climate friendly companies, technologies and products • assessment of GHG exposure and emissions control plans in projections of company cash flow, capital cost and share price valuations • proxy voting policies and procedures, disclosure of votes and engagement with companies and policymakers 	<ul style="list-style-type: none"> • statement on climate change as a matter of corporate governance (including board oversight procedures) • assessment of GHG regulations (proposed and in effect) and possible physical effects of climate change on company operations • likelihood of material risks posed by GHG regulations and physical effects of climate change, including the time frame in which they may occur • GHG emissions baselines, targets and control strategies • outside affiliations and activities focused on climate change, including shareholder engagement and lobbying activities

DISCLOSURE

Account for Emissions

The more that greenhouse gas reporting uses a common, standardized format, the easier it is for institutional investors and other stakeholders to assess and compare company performance, and to encourage companies to move to a higher performance level. The Greenhouse Gas Protocol, developed by the World Business Council for Sustainable Development and the World Resources Institute, has emerged as a common metric for emissions reporting and is incorporated in the Global Reporting Initiative Sustainability Reporting Guidelines.

Plan Sponsors	Fund Managers	Corporations
<i>Ask companies to disclose emissions based on Greenhouse Gas Protocol, and account for emissions from property holdings.</i>	<i>Ask companies to disclose emissions based on the Greenhouse Gas Protocol to provide comparable and verifiable emissions data.</i>	<i>Base emissions inventory methods, baselines and targets on the Greenhouse Gas Protocol, and make data independently verifiable.</i>
<ul style="list-style-type: none"> • urge companies to report GHG emissions based on the Greenhouse Gas Protocol • ask companies to submit annual reports based on the Global Reporting Initiative • participate in the Carbon Disclosure Project • support and sponsor shareholder resolutions seeking disclosure of GHG emissions baselines and targets • set engagement and investment criteria that favors companies with GHG emissions transparency and reduction goals • assess GHG emissions from property holdings, as outlined in the Greenhouse Gas Protocol 	<ul style="list-style-type: none"> • urge companies to report GHG emissions based on the Greenhouse Gas Protocol • ask companies to submit annual reports based on the Global Reporting Initiative • participate in the Carbon Disclosure Project • support and sponsor shareholder resolutions seeking disclosure of GHG emissions baselines and targets, and request emissions data in analyst briefings • pursue engagement and investment strategies that favor companies with GHG emissions transparency and reduction goals • urge companies to report on GHG emissions from property holdings and product-life cycle emissions 	<ul style="list-style-type: none"> • submit annual emissions inventory data based on the Greenhouse Gas Protocol • report emissions annually through the Global Reporting Initiative or comparable accounting system • respond to questionnaires from the Carbon Disclosure Project • set emissions reduction targets for operations and products that are updated at least annually and can be independently verified • certify emissions by an accredited third party auditor and register emissions with an independent group such as the World Economic Forum Global GHG Register, Climate Leaders or the California Climate Action Registry • assess GHG emissions from property holdings and product life-cycle emissions

DISCLOSURE

Maintain Stakeholder Dialogue

Institutional investors can employ various forms of communication and dialogue to obtain climate risk information from corporations. One of the most effective means is through the support and sponsorship of climate change shareholder resolutions. Many companies have agreed to produce reports and engage in further dialogue when such proposals come to votes or have been withdrawn. Fund managers can obtain additional information through analyst briefings held regularly with companies. Letter-writing campaigns such as the Carbon Disclosure Project and programs facilitated by CERES and the Investor Network on Climate Risk also enable investors to pool their knowledge and assets to have greater leverage on companies.

Plan Sponsors	Fund Managers	Corporations
<i>Engage beneficiaries, fund managers and companies in dialogue, and adopt proxy voting guidelines to urge corporate action on climate change.</i>	<i>Ask companies about climate change strategies in analyst briefings, and vote proxies in support of company action on climate change.</i>	<i>Reach out to shareholders, investment analysts and public interest groups to promote an open forum and pro-active responses to climate change.</i>
<ul style="list-style-type: none"> • ask investment consultants, fund managers, securities analysts and portfolio companies for climate change risk assessments • develop proxy voting guidelines to urge companies to report on climate-related risks, adoption of GHG controls and pursuit of climate friendly business strategies • consider sponsoring or co-filing climate change resolutions, participate in proxy solicitations and letter writing campaigns (such as the Carbon Disclosure Project), and support the Global Reporting Initiative and Greenhouse Gas Protocol • join multi-stakeholder groups like CERES and the Investor Network on Climate Risk • conduct regular two-way communication on climate change with beneficiaries, fund managers, portfolio companies, government policymakers and outside experts on climate change 	<ul style="list-style-type: none"> • engage companies through analyst briefings and by other means to evaluate GHG risk exposure and mitigation plans • vote proxies in accordance with plan sponsor proxy voting guidelines and consistent with fiduciary prudence • consider sponsoring or co-filing climate change resolutions, participate in proxy solicitations and letter writing campaigns (such as the Carbon Disclosure Project), and support the Global Reporting Initiative and Greenhouse Gas Protocol • join multi-stakeholder groups like CERES and the Investor Network on Climate Risk • communicate regularly with plan sponsors, portfolio companies, securities analysts, government policymakers and outside experts on climate change 	<ul style="list-style-type: none"> • seek input from and provide information to plan sponsors, fund managers and securities analysts to assess climate change risk and opportunities • engage with shareholder proponents in an effort to reach agreement on climate change disclosure and action requests (sometimes resulting in resolution withdrawals) • provide public information in accordance with third-party requests, such as through the Carbon Disclosure Project and Global Reporting Initiative, and invite feedback on the information presented • join multi-stakeholder groups like CERES and other climate-related stakeholder networks • conduct regular two-way communication on climate change with employees, plan sponsors, fund managers, securities analysts, government policymakers and outside experts on climate change

SOLUTIONS

Devise Investment Strategy

All institutional investors, including pension funds, mutual funds, foundations and endowments, can develop strategies to address embedded climate risk and declare them in plan documents and statement of principles. Fund managers and securities analysts can incorporate climate risk in their evaluation of companies and industry sectors in an effort to attain superior, risk-adjusted returns. Corporations can factor costs of greenhouse gas emissions in major capital investment and operating decisions to gain competitive advantage and enhance their public reputations.

Plan Sponsors	Fund Managers	Corporations
<i>Seek long-term wealth creation by urging best practices among fund managers and companies.</i>	<i>Match fund objectives with reduced climate risk exposure to optimize investment returns.</i>	<i>Integrate climate policy in strategic business planning to maximize opportunities and minimize risks.</i>
<ul style="list-style-type: none"> • set investment time horizons that coincide with long-term fiduciary objectives and obligations • establish climate risk competence as a selection criterion in requests for proposals with investment consultants, fund managers and property managers • urge securities analysts and credit rating agencies to assess GHG exposure and emissions control plans in company credit risk evaluations • adopt 'universal ownership' principle that ties wealth creation to broad, sustainable economic growth, not just singular portfolio returns • consider investment externalities (e.g., added public health and infrastructure costs from climate change) in measures of plan contributions to beneficiaries 	<ul style="list-style-type: none"> • expand time horizons to manage plan sponsor investments • develop portfolio management strategies that reduce climate risk, and offer select funds and private equity placements in climate friendly technologies, products and companies • rebalance active portfolios according to most and least risk-exposed companies and sectors, and enhance index funds through similar rebalancing efforts • assess GHG exposure and emissions control plans in projections of company cash flow, capital costs and share price valuations • factor existing and prospective government policies as well as projected physical effects of climate change in sectoral and regional asset allocation decisions 	<ul style="list-style-type: none"> • seek and obtain board approval of a long-term strategic plan to target and control GHG emissions • make strategic investments in climate friendly technologies, products and manufacturing processes • establish a business unit to collect GHG emissions data and engage in emissions trading to boost internal rates of return • include compensation incentives to achieve company GHG emissions reduction targets • factor costs of GHG emissions in major investment and operating decisions, and physical effects of climate change in major facility siting decisions

SOLUTIONS

Invest in Clean Energy

Many promising investment opportunities are available for the development and commercialization of new clean energy technologies. Collectively, renewables like wind and solar are the world's fastest growing sources of energy. Plan sponsors can help minimize the adverse effects of climate change by allocating venture capital to private firms engaged in the development of clean energy technologies. Fund managers can channel investment capital into mutual funds and other managed accounts whose stock selection is focused on companies with clean energy technologies and products, and companies with superior positioning and reduced exposure to climate risk. Finally, plan sponsors, fund managers and securities analysts can engage companies directly to spur development of clean energy technologies in an effort to bolster their competitive positioning and reduce their greenhouse gas emissions.

Plan Sponsors	Fund Managers	Corporations
<i>Direct investment capital to clean energy technologies and promote climate friendly building practices.</i>	<i>Develop clean energy investment products and analyze companies' energy use and trends.</i>	<i>Set goals to increase energy efficiency, purchase and/or develop clean energy, and capture/offset GHG emissions.</i>
<p><i>Clean energy technologies include:</i></p> <ul style="list-style-type: none"> • wind power • photovoltaics and solar thermal • biomass • geothermal • low-impact hydro • landfill gas and coalbed methane recovery <p><i>Low-carbon technologies include:</i></p> <ul style="list-style-type: none"> • fuel cells and microturbines • hybrid internal combustion engines • integrated gasification combined cycle turbines • carbon capture and storage <p><i>Climate friendly building practices include:</i></p> <ul style="list-style-type: none"> • comprehensive energy audits • 'smart building' energy management systems • energy efficient lighting and HVAC systems • building-integrated design of passive and active solar power • thermal energy storage systems • shared-savings contracts with energy service companies • benchmarking of building performance • transportation and siting issues such as flexible work schedules, telecommuting, car pooling, use of mass transit, reduced employee travel and fleet purchases of fuel efficient vehicles 	<p><i>Climate friendly investment products include:</i></p> <ul style="list-style-type: none"> • portfolio screening based on company energy performance • mutual fund instruments for clean energy companies, technologies and products • venture capital investments in emerging clean energy companies, technologies and products <p><i>(See Plan Sponsors column for listing of clean energy technologies)</i></p> <p><i>Analysis of energy use includes:</i></p> <ul style="list-style-type: none"> • power demand, power generation and total energy use • normalized energy costs (e.g., Btus/\$ revenue) and exposure to energy pricing volatility • clean energy purchase and development plans • energy management systems and personnel • use of emissions credits to leverage energy efficiency and clean energy investments • benchmarking of company energy performance 	<p><i>Clean energy goals include:</i></p> <ul style="list-style-type: none"> • targets to control energy and carbon intensity, including in products • targets to increase energy efficiency and purchase of clean energy technologies and products • research and development of clean energy technology and products • research and demonstration of carbon capture and storage <p><i>(See Plan Sponsors column for listing of clean energy technologies)</i></p> <p><i>Climate friendly building practices include:</i></p> <ul style="list-style-type: none"> • analysis of energy use and trends (see also <i>Fund Managers column</i>) • climate friendly building practices (see also <i>Plan Sponsors column</i>)

SOLUTIONS

Support Government Action

Companies and investors face tremendous uncertainty regarding the future course of U.S. and international climate change regulation. Investors and corporations recognize that this uncertainty creates substantial business risk and makes for the least optimal path forward in making major investment decisions. Government action can address this investor and regulatory uncertainty by enacting mandatory policies to achieve clearly defined absolute reductions in greenhouse gas emissions.

Plan Sponsors	Fund Managers	Corporations
<i>Support government actions to promote investor certainty, including mandatory policies to achieve absolute GHG emissions reductions.</i>	<i>Support government actions to promote investor certainty, including mandatory policies to achieve absolute GHG emissions reductions.</i>	<i>Support government actions to promote strategic planning and technology innovations, including mandatory policies to achieve absolute GHG emissions reductions.</i>
<ul style="list-style-type: none"> • support current and proposed government requirements to achieve absolute reductions in greenhouse gas emissions • support a ‘cap-and-trade’ regulatory system that creates market-based, least-cost approaches to achieving GHG emissions reductions • support mandatory reporting of GHG emissions through the Greenhouse Gas Protocol or comparable accounting system • demand forward-looking, time-referenced disclosure of climate change risks and opportunities in securities filings, pursuant to Regulation S-K • ask the SEC to permit shareholder resolutions addressing material risks and benefits of climate change under Rule 14(a)-8 • seek sustained government support for energy efficiency and clean technology research and development to diversify the energy supply 	<ul style="list-style-type: none"> • support current and proposed government requirements to achieve absolute reductions in greenhouse gas emissions • support a ‘cap-and-trade’ regulatory system that creates market-based, least-cost approaches to achieving GHG emissions reductions • support mandatory reporting of GHG emissions through the Greenhouse Gas Protocol or comparable accounting system • demand forward-looking, time-referenced disclosure of climate change risks and opportunities in securities filings, pursuant to Regulation S-K • ask the SEC to permit shareholder resolutions addressing material risks and benefits of climate change under Rule 14(a)-8 • seek sustained government support for energy efficiency and clean technology research and development to diversify the energy supply 	<ul style="list-style-type: none"> • support current and proposed government requirements to achieve absolute reductions in greenhouse gas emissions • support a ‘cap-and-trade’ regulatory system that creates market-based, least-cost approaches to achieving GHG emissions reductions • support mandatory reporting of GHG emissions through the Greenhouse Gas Protocol or comparable accounting system • provide forward-looking, time-referenced disclosure of climate change risks and opportunities in securities filings, pursuant to Regulation S-K • do not challenge shareholder resolutions addressing material risks and benefits of climate change under Rule 14(a)-8 • seek sustained government support for energy efficiency and clean technology research and development to diversify the energy supply

Organizations and Collaborations Focused on Climate Change

Climate change investor networks and coalitions include:

- Investor Network on Climate Risk (www.incr.com)
- Carbon Disclosure Project (www.cdproject.net)
- Institutional Investors Group on Climate Change (www.iigcc.org)

Other major investor networks with members addressing climate risk include:

- Council of Institutional Investors (www.cii.org)
- Interfaith Center on Corporate Responsibility (www.iccr.org)
- International Corporate Governance Network (www.icgn.org)
- Local Authority Pension Fund Forum (UK) (www.lapfforum.org)
- National Association of State Treasurers (www.nast.net)
- Social Investment Forum (www.socialinvest.org)
- Social Investment Organization (Canada) (www.socialinvestment.ca)

Non-profit groups addressing investment and governance implications of climate change include:

- CERES (www.ceres.org)
- Global Reporting Initiative (www.globalreporting.org)
- United Nations Environmental Programme Financial Initiative (www.unepfi.net)
- World Resources Institute (www.wri.org)

Climate change industry partnerships include:

- Business Council for Sustainable Energy (www.bcse.org)
- Business Environmental Leadership Council (www.pewclimate.org)
- Chicago Climate Exchange (www.chicagoclimatex.org)
- Climate Leaders (www.epa.gov/climateleaders)
- World Economic Forum (www.weforum.org)

Industry-NGO collaborations addressing climate change include:

- CERES (www.ceres.org)
- Environmental Defense Partnership for Climate Action (www.pca-online.org)
- Greenhouse Gas Protocol (www.ghgprotocol.org)
- World Resources Institute Green Power Market Development Group (www.thegreenpowergroup.org)
- World Wildlife Fund Climate Savers (www.panda.org)

About the Author

Douglas G. Cogan is deputy director of the Social Issues Service for the Investor Responsibility Research Center (IRRC). Mr. Cogan is the author of several books on energy and environmental topics. In 2003, CERES commissioned him to write *Corporate Governance and Climate Change: Making the Connection*, which identified 14 specific actions that companies are taking to implement governance responses to climate change. Mr. Cogan's 1992 book, *The Greenhouse Gambit: Business and Investment Responses to Climate Change*, was one of the first to focus on the implications of climate change for the auto, electric power, agriculture and forest products industries. Since 1990, Mr. Cogan has covered the U.S. global warming shareholder campaign and has written approximately 50 company analyses on this topic. He has also written extensively on fiduciary issues related to social investing and shareholder activism, and has testified before Congress. Mr. Cogan is a graduate of Williams College, where he received highest honors in political economics.

The Investor Responsibility Research Center (IRRC) is an independent research firm that is the leading source of high quality, impartial information on corporate governance and social responsibility issues. For more than three decades, IRRC has provided research, software products and consulting services to institutional investors, corporations, foundations, religious organizations and others. IRRC offers complete solutions for proxy research and voting, screening and benchmarking, and corporate services. Because it does not advocate on any side of the issues it covers, clients can be assured that the information and analysis IRRC provides is objective and unbiased. IRRC has approximately 100 professional staff members and is based in Washington, D.C. For more information, visit www.irrc.org.

About CERES

CERES is a national coalition of investment funds, environmental organizations, and other public interest groups. Our mission is to move businesses, capital, and markets to advance lasting prosperity by valuing the health of the planet and its people. CERES represents more than \$400 billion in assets. Investor members include state and municipal pension funds, socially responsible investment firms, religious groups, union funds, and foundations. Since its founding in 1989, CERES has persuaded dozens of companies to endorse the CERES Principles. CERES co-founded the Global Reporting Initiative (GRI) with the United Nations Environment Programme and is secretariat for the Investor Network on Climate Risk. CERES is currently bringing together the sustainability and corporate governance movements to improve corporate and public policies on climate change and other social, environmental and governance issues. For more information, visit www.ceres.org.

About This Guide

This report is available on the Internet at www.incr.com, www.ceres.org and www.irrc.org.

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