Institutional Investor Summit on Climate Risk

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Final Report

Co-Chairs

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Timothy E. Wirth • *President, United Nations Foundation*

Co-Hosts

CERES
Network for Change

United Nations Fund for International Partnerships

Summit Conveners

- **Klaus Toepfer**, Executive Director, United Nations Environment Programme
- **Phil Angelides**, Treasurer of California
- **Carol Browner**, EPA Administrator, U.S. Environmental Protection Agency, 1993-2001
- **Timothy Cahill**, Treasurer of Massachusetts
- **Anthony Calhoun**, Treasurer of District of Columbia
- **Abby Cohen**, Managing Director, Goldman Sachs
- **John Coomber**, CEO, Swiss Re
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- **Stephen Davis**, President, Davis Global Advisors
- **Randall Edwards**, Treasurer of Oregon
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- **Michael Fitzgerald**, Treasurer of Iowa
- **Tom Gallagher**, Chief Investment Officer, State of Florida
- **Paul Grogan**, President, Boston Foundation
- **Barbara Hafer**, Treasurer, State of Pennsylvania
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- **Stephen Heintz**, President, Rockefeller Brothers Fund
- **Eric Heitz**, President, Energy Foundation
- **Alan Hevesi**, Comptroller of New York State
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- **Jonathan Miller**, Treasurer of Kentucky
- **Nell Minow**, Editor, The Corporate Library
- **Robert Monks**, LENS Fund
- **Richard Moore**, Treasurer of North Carolina
- **Denise Nappier**, Treasurer, State of Connecticut (Summit Co-Chair)
- **Anne-Maree O'Connor**, Managing Director, CoreRatings
- **Joshua Reichert**, Director, Environment Program, The Pew Charitable Trusts
- **William Roberts**, President, Beldon Fund
- **John Ruggie**, Director, Center for Business and Government, Harvard Kennedy School of Government
- **Adele Simmons**, Director, Marsh & McLennan Companies
- **Edward Skloot**, Executive Director, Surdna Foundation
- **Theodore Smith**, President, Henry Kendall Foundation
- **Pam Solo**, President, Civil Society Institute
- **Bob Sowman**, Chair, Local Authority Pension Fund Forum
- **Jeb Spaulding**, Treasurer of Vermont
- **Andrew Stern**, President, SEIU
- **Raj Thamotheram**, Chair, Institutional Investors Group on Climate Change (EU)
- **William Thompson**, Comptroller of the City of New York
- **Robert Vigil**, Treasurer of New Mexico
- **Timothy Wirth**, President, United Nations Foundation (Summit Co-Chair)
- **Wren Wirth**, President, The Winslow Foundation

Foreword

Summit Co-Chairs Connecticut Treasurer Denise Nappier and United Nations Foundation President Timothy Wirth

Climate change is rapidly emerging as our greatest environmental and economic challenge – with ramifications that extend to businesses in countless industries and their shareholders around the world.

The financial implications of global warming raise serious and substantive questions for investors concerned about the safety and soundness of pension investments. While governments must respond promptly and effectively to the environmental threat, investors must be provided with sufficient information to adequately consider the economic risks to their investments. As a growing potential risk factor that could adversely affect individual and institutional investments, climate change is deserving of our attention.

It is with that imperative that we convened an historic summit of institutional investors at the United Nations on November 21, 2003. Investors representing over $1 trillion in assets attended the Institutional Investor Summit on Climate Risk, along with many of their fund managers from Wall Street firms and representatives of the financial industry nationwide.

It was an extraordinary meeting, with thoughtful engagement by leaders across the investment community. We heard from experts in science, business, and government, and engaged in a conversation among peers about actions investors need to take to minimize the financial risks of climate change. For some it marked the continuation of an important dialogue, for many others it was the beginning of an important education process.

While it is becoming increasingly clear that fundamental changes in the way we use and produce energy must be made in order to curtail dangerous concentrations of carbon in the atmosphere, effectuating these changes will have impacts throughout our global economy. These changes will present both new obligations and opportunities for corporations, investors and governments. Those with fiduciary responsibilities have a particular duty to examine this issue and choose a prudent course of action, but all shareholders have a direct interest in how companies respond to the changing regulatory environment.

For those who were present, we urge you to continue the conversations with your colleagues who could not attend. For those who were not there, we urge you to read this report and learn more by visiting the website of the new Investor Network on Climate Risk (www.incr.com). We trust that this background will provide a solid foundation to foster renewed consideration of the risks of climate change on today's investments. We also welcome support for the efforts of INCR to raise awareness and to draw attention to the need to protect investors by properly including climate risk in corporate financial disclosure. While some companies now provide this data and analysis, most still do not.

The Institutional Investor Summit on Climate Risk would not have been possible without the dedication and commitment of dozens of people. We wish to extend our sincere thanks to United Nations Secretary-General Kofi Annan and his staff for welcoming us into UN Headquarters and reminding us that addressing climate change is truly a global challenge. We also appreciate the willingness of the Summit conveners to step forward and join us in leading the effort to educate others about the complexities of the issue. Finally, we thank staff members at the Connecticut Treasurer's Office and the United Nations Foundation for their hard work, and the staff of CERES, especially Executive Director Mindy Lubber and Senior Fellow Bob Massie, for developing and so capably organizing this remarkable meeting.

The landmark success of the Summit is only the beginning, and we look forward to hearing from you with any ideas or reactions you may have, and your continued involvement, as this important work continues.

Tim Wirth
President
United Nations Foundation
Co-Chair

Denise Nappier
Treasurer
State of Connecticut
Co-Chair

Executive Summary

Major pension fund managers and other institutional investors, along with representatives of leading Wall Street fund management firms, met for the first time to consider the potential risks to their portfolios posed by climate change at the Institutional Investor Summit on Climate Risk at the United Nations on November 21, 2003. The Summit provided a forum for major financial leaders to exchange views as peers, to consider the connection between climate risk and fiduciary responsibility, and to share best practices for moving forward. Participants reviewed and discussed:

- The science of climate change,
- The importance of climate change as a risk issue that investors should seriously consider, and
- Possible actions that investors can take to address climate risk embedded in their portfolios.

At the meeting, eight state and city treasurers and comptrollers and two major labor pension fund leaders issued a 10 point "call to action" recommending new steps by the U.S. Securities and Exchange Commission (SEC), corporate boards and Wall Street firms to increase corporate disclosure of the risks posed by climate change to investors. These investors also announced the creation of an Investor Network on Climate Risk to promote better understanding of the risks of climate change among institutional investors and to follow through on the "call to action."

Investors at the Summit included state treasurers and comptrollers from California, Connecticut, the District of Columbia, Iowa, Kentucky, Maine, Maryland, Massachusetts, New Mexico, New York State, North Carolina, Oregon and Vermont, the heads of labor funds SEIU National Industry Pension Fund and the CWA/ITA Negotiated Pension Plan, trustees of Los Angeles and New York City retirement systems, the heads of the California Public Employees Retirement System (CalPERS) and the California State Teachers' Retirement System (CalSTRS), and representatives of the New York State Teachers' Retirement System and the Michigan Municipal Employee Retirement System.

Wall Street and financial services firms were represented by senior executives from AllianceBernstein, Bank of America, Bank of New York, Barclays, BlackRock, Capital Group, CoreRatings, Fidelity, FleetBoston Financial, Goldman Sachs, Invesco, Lazard Asset Management, Lehman Brothers, Marsh and McLennan, Mellon Financial, Morgan Stanley, Moody's, Putnam, Standard and Poor's, State Street, Swiss Re, Trust Company of the West, Wellington Management, and Williams Capital Group, among others. Also in attendance was former Vice President Al Gore, in his capacity as Vice Chairman of Metropolitan West Financial.

CERES, the U.S.-based coalition of investment funds and public interest groups, organized the Summit, and Connecticut State Treasurer Denise Nappier and United Nations Foundation President Timothy Wirth co-chaired it. The United Nations Fund for International Partnerships, the UN Environment Programme (UNEP), and other UN agencies supported the meeting, and UN Secretary-General Kofi Annan and UNEP Executive Director Klaus Toepfer welcomed the group to the UN.

Key Issues

The Science of Climate Change

In briefing participants on the current status of science and policy on climate change, Harvard University Professor John Holdren concluded that climate change presents both immense dangers and possibilities for firms and investors. He pointed out that climate change is:

- The most dangerous of all the environmental problems caused by human activity, because climate is the "envelope" within which all other environmental conditions and processes operate.
- Highly intractable because the dominant cause of climate change – emissions of carbon dioxide from fossil fuel combustion – arises from the process that currently supplies nearly 80 percent of civilization's energy, and because the technologies involved cannot be quickly or inexpensively changed in ways that would eliminate the problem.

Professor Holdren emphasized that significant actions on emissions reduction must begin now in order to prevent a sharp rise in greenhouse gas concentrations by 2010. He also stated that multiple opportunities exist to reduce emissions. (Dr. Holdren's full presentation is available on the Web at www.incr.com.)

"I submit that the problem of disruption of global climate by human-produced greenhouse gases is going to come to be understood in the decades immediately ahead… as the most dangerous and the most intractable of all of the environmental problems caused by human activity."

Dr. John Holdren

The Role of Investors in Considering Climate Risk

Both presenters and participants urged institutional investors, as part of their fiduciary responsibilities, to take a range of actions designed to understand and to mitigate investor climate risk.

U.N. Secretary-General Kofi Annan said investors should seek disclosure of climate risk and that this action would "send a message that corporate performance will be measured in both financial and environmental terms." He said such disclosure would be "a real step forward ... for corporate governance, transparency and accountability in general."

Former White House Chief of Staff and former New York Stock Exchange Director Leon Panetta called global warming a "perfect storm in the making." He urged investors to seek corporate disclosure of climate risk, conduct independent analysis of that risk, and get organized. He urged all investors to ask, "Under what circumstances and to what degree will my portfolio be affected by climate risk?"

Connecticut Treasurer Denise Nappier and UN Secretary-General Kofi Annan

"If the political system turns out to be incapable of dealing with it ... the same not need be the case for the business community and the investment community," former Vice President Al Gore, currently the vice chairman of Metropolitan West Financial, told the conference. "You have responsibility as fiduciaries... to analyze risk and look for opportunities."

Swiss Re CEO John Coomber said his own company was taking actions to reduce the substantial risks of climate change because it "creates an unpredictable environment, and an unpredictable environment is the enemy of managing risk, it's the enemy of commercial enterprise."

Investor leaders at the Summit press conference (front row L to R): California Treasurer Phil Angelides, Connecticut Treasurer Denise Nappier, New York State Comptroller Alan Hevesi, CERES Executive Director Mindy Lubber (back row L to R): Vermont Treasurer Jeb Spaulding, Oregon Deputy Treasurer Linda Haglund, Teamsters General Secretary-Treasurer Tom Keegel, Maine Treasurer Dale McCormick, CWA/ITA Pension Plan Chairman Bill Boarman, SEIU Pension Fund Executive Director Steve Abrecht

Announcement of Action Plan and Investor Network on Climate Risk

Eight state and city treasurers and comptrollers and two major labor pension fund executives issued a 10-point "call for action" recommending tough new steps by the U.S. Securities and Exchange Commission (SEC), corporate boards and Wall Street firms to increase corporate disclosure of the risks posed by climate change to investors.

The officials said that they will immediately petition the SEC for enforcement of environmental risk disclosure requirements, seek climate risk disclosure at companies in the oil and gas, electric power, automobile and other sectors, and form an Investor Network on Climate Risk (INCR) to follow through on their plans. They also urged other institutional investors such as pension and mutual funds to vote in support of shareholder resolutions seeking disclosure of climate risks for investors. (For details on the 10-point action plan and INCR, visit www.incr.com)

The initial members of INCR and signers of the 10-point call for action include 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, SEIU National Industry Pension Fund Director Steve Abrecht and CWA/ITA Negotiated Pension Plan Chairman William Boarman.

Other Actions Investors Can Take

In addition, participants suggested a spectrum of actions that investors could take to address climate risk, including:

- Studying financial implications of climate risk on the investments they make
- Seeking corporate disclosure of climate risk either through the SEC or companies
- Conducting analysis of portfolio, sector, and company climate risk
- Exercising shareholder rights through proxy filing and voting
- Collaborating with other investors to seek action
- Committing to and reducing emissions from the institution or its investments
- Seeking out new investment opportunities
- Developing new tools, such as emissions trading

Detailed Summary

Science of Climate Change

Dr. John Holdren introduced Summit participants to the science of climate change with a detailed briefing based on the conclusions of the Intergovernmental Panel on Climate Change (IPCC). The IPCC is a worldwide scientific body commissioned by the UN to develop the science for policy makers, and it represents the views of the vast majority of the world's scientists.

The scientific consensus is that continuing with "business as usual" greenhouse gas emissions will lead to increases of 2–4°C in average temperature by 2100, with warming in the middle of continents of 4–12°C. Major changes in climate will result, and impacts on human well-being will be far more negative than positive.

Further, Holdren noted that no skeptic has ever developed a credible theory explaining both an alternative cause of observed climate changes and how greenhouse gases are not having the effects that all current scientific understanding says they are.

Holdren began by reviewing:

- What climate is and why it matters
- The evidence that climate is changing
- The evidence that humans are responsible
- Climate-change consequences of continuing with "business as usual"
- Impacts of "business as usual" climate change on human well-being

What Climate is and Why it Matters

Climate encompasses all of the weather conditions in a region, including averages and extremes of:

- Hot and cold
- Wet and dry
- Snow pack and snowmelt
- Winds and storm tracks
- Ocean currents and upwellings

Climate is critical to the functioning of the planet and all living things because it governs:

- Productivity of farms, forests, and fisheries
- Geography of disease
- Livability of cities in summer
- Damage from storms, floods, droughts, and wildfires
- The location and risk to property from the levels of the oceans
- Expenditures on engineered environments, such as dams, dikes, and port facilities
- Distribution and abundance of species

"Embedded in the challenge of climate change are both dangers and possibilities. Immense dangers for firms and investors who make bad choices, or no choices, about how to respond to the risks posed by climate change, and are then held accountable in the marketplace, the boardroom, or the courts; and immense possibilities for firms and investors to turn challenge into opportunity, acting prudently and creatively to help society reduce the risks that it faces from climate change and making money doing so."

Dr. John Holdren

Harvard University Professor Dr. John Holdren (presentation on enclosed CD and at www.incr.com)

Evidence that Climate is Changing

The IPCC has collected vast amounts of evidence that the Earth's climate is already changing.

First, the average temperature of the earth is rising:

- Temperatures have increased 0.7±0.2°C in last 140 years (instrumental records).
- 19 of the 20 warmest years since 1860 have all occurred since 1980; the 11 warmest all since 1990.
- 1998 was the warmest year in the instrumental record and probably the warmest in 1,000 years (tree rings, ice cores); 2002 was the second warmest.
- The last 50 years appear to have been the warmest half century in 6,000 years (ice cores).
- Compilation of worldwide ocean-temperature measurements shows significant ocean warming between the mid-1950s and the mid-1990s.

Second, observations over recent decades also show changes that are consistent with climate change:

- Evaporation and rainfall are increasing
- More of the rainfall is occurring in downpours
- Permafrost is melting
- Corals are bleaching
- Glaciers are retreating
- Sea ice is shrinking
- Sea levels are rising
- Wildfires are increasing
- Storm and flood damages are soaring

Evidence that Humans are Responsible

There is no scientific doubt that most of the observed greenhouse gas increases and changes in the climate are human-caused, according to Holdren and the IPCC. The main natural and human phenomena affecting climate are well known, and scientists have measured or estimated their impacts. Comparisons of the influences on global climate in the 250 years since the beginning of the Industrial Revolution indicate that the rising concentrations of human-induced greenhouse gases have created the largest warming effect.

- Essentially all of the observed climate-change phenomena are consistent with the predictions of climate science for greenhouse gas induced warming.
- No alternative "culprit" identified so far – no potential cause of climate change other than greenhouse gases – yields this "fingerprint" match.
- A credible skeptic would need to explain both what the alternative cause of the observed changes is and how it could be that greenhouse gases are NOT having the effects that all current scientific knowledge indicates. (No skeptic has done either thing.)

Other evidence to support this view includes:

- The increases in atmospheric carbon dioxide (CO_2) and other globally mixed greenhouse gases have been accurately measured in real time for decades.
- The atmospheric concentrations of greenhouse gases going back for millennia have been determined by analysis of air trapped in bubbles in Antarctic and Greenland ice.
- The main human sources of CO_2 – deforestation and fossil fuel burning – are well quantified. The observed CO_2 build-up in the atmosphere matches these human inputs, after subtraction of estimated rates of uptake in the oceans and northern forests.

- The ice-core data show that atmospheric CO_2 has not been above 300 parts per million (ppm) in the last 400,000 years (it's over 370 ppm today) and that natural fluctuations in atmospheric CO_2 over the past 10,000 years have been only ±10 ppm (compared to the 90 ppm increase since the start of the Industrial Revolution).
- Carbon-14 analysis of tree rings back to 1800 confirms the fossil-fuel contribution to the atmospheric CO_2 burden in the last 200 years.

"We must encourage, prod, push corporations to provide meaningful, consistent, and robust reporting of their environmental practices, risks, and liabilities."

Phil Angelides

Consequences of Continuing on the Current Path

The IPCC has examined in detail the consequences of continuing on a path of increasing greenhouse gas emissions and concentrations of these gases in the Earth's atmosphere. The scientific-consensus "best estimates" are that:

- Continuing "business as usual" greenhouse gas emissions will lead to increases of 0.2–0.4°C per decade in global-average surface temperature, or 2–4°C warmer than now by 2100.
- Warming in the middle of continents will be 2–3 times greater.
- The earth will then be warmer than at any time in the last 160,000 years. Sea levels will be 20–100 cm higher than today (the best estimate is 50 cm).
- This global-average warming will entail major changes in climatic patterns: storm tracks, distribution of precipitation and soil moisture, and extremes of hot and cold.
- Because of the pace and magnitude of the changes in climatic patterns and because society's interactions with the environment are attuned to the current climate, impacts on human well-being will be far more negative than positive.

Phil Angelides, Treasurer, State of California

Impacts

Projected adverse impacts from these changes in the climate include:

- A general reduction in potential crop yields in most tropical and sub-tropical regions;
- A general reduction, with some variation, in potential crop yields in most regions in mid-latitudes which suffer increases in average-annual temperature of more than a few degrees C;
- Decreased water availability for populations in many water-scarce regions, particularly the sub-tropics;
- An increase in the number of people exposed to vector-borne diseases (e.g., malaria) and water-borne diseases (e.g., cholera) and an increase in heat-stress mortality;
- A widespread increase in the risk of flooding for many human settlements, affecting tens of millions of people worldwide, from both increased heavy precipitation events and sea-level rise; and
- Increased energy demand for space cooling due to higher summer temperatures.

Former Vice President Al Gore and UN Secretary-General Kofi Annan

Possible Benefits

Changes in the Earth's climate could produce some benefits, which include:

- Increased potential crop yields in some regions at mid-latitudes, for increases in temperature of less than a few degrees C;
- Increased water availability for populations in some water-scarce regions, e.g., in parts of South East Asia;
- Reduced energy demand for space heating due to higher winter temperatures.

On balance, the negative changes will far outweigh the positive ones.

Studies May Understate Impacts

However, scientific research completed to date may understate the potential impacts of climate change for two reasons.

First, most studies of adverse and beneficial impacts of climate change have focused on just a doubling of pre-industrial CO_2 (because of the need for comparability among models). But under current business-as-usual projections, emissions will careen past a doubling around mid-century, heading for a tripling by 2100 and a quadrupling soon after. According to this scenario, early positive impacts of climate change are reversed, and the negative ones become overwhelming. For example, quadrupling CO_2 would increase temperature by an average of 15–25°F and decrease soil moistures 50–60% in the mid-continent regions of the northern hemisphere – a disaster for agriculture.

Second, the climate system is not fully understood by scientists, and surprises are possible. Each of these could drastically increase the severity of all expected impacts. Possible surprises include:

- Large increases in the frequency of highly destructive storms
- Drastic shifts in ocean current systems that control regional climates (e.g., the Gulf Stream's warming effect on Western Europe)
- Multi-meter sea-level rise over a period of centuries, from the disintegration of the West-Antarctic ice sheet
- Runaway greenhouse effect from the decomposition of methane clathrates (the release of methane, a greenhouse gas, into the atmosphere because of melting glaciers)

Reducing the Risks from Climate Change

Holdren also addressed the basic approaches that are available to society to reduce the risks associated with climate change, and he offered a policy approach for the United States and the world. Approaches that society could pursue include:

- Reduce emissions of greenhouse gases. Reducing emissions is essential, even if all of the other strategies are pursued.
- Remove greenhouse gases from the atmosphere by growing more trees, or phytoplankton, or by technological means.

- Counteract climatic effects through geotechnical engineering.
- Adapt to climate change by building dams and dikes, changing patterns of agriculture, increasing summer air conditioning, and other measures. These approaches become costlier and less effective as the degree of climate disruption grows.
- Compensate the victims of climate change, such as those who die of heat stroke or whose property is lost through rising sea levels or worsened storms.

Technical Options for Reducing Greenhouse Gas Emissions

The IPCC and other experts have identified a wide spectrum of technical options for reducing greenhouse gas emissions. They include:

- Increased efficiency of energy end-use in buildings, transportation, and industry
- Transition to a lower-energy-intensity mix of economic activities
- Increased efficiency of conversion of fossil fuels to end-use energy forms
- Switching from coal and oil to natural gas
- Capturing and sequestering (storing) carbon when fossil fuels are refined or used
- Increased deployment of renewable and nuclear energy options

What Policies Should Be Undertaken

Holdren recommended specific policy actions that could be taken to reduce emissions of greenhouse gases over time. He suggested:

- The United States
  - Impose an escalating carbon tax or, alternatively, a declining emissions cap implemented through tradable permits, to promote low- and no-carbon choices from the current energy-technology menu and increased private-sector innovation to improve the menu over time.
  - Increase US government investments in low- and no-carbon energy-technology innovation (supply-side and demand-side) and in international cooperation on energy-technology innovation by 5–10x.
  - Sharply increase US efforts (and US support for international efforts) on adaptation to climate change.
- The United Nations devise an adequate, affordable, and equitable global framework for reducing climate change risks.

Abby Joseph Cohen, Managing Director, Goldman Sachs

In discussion following Professor Holdren's presentation, Summit participants focused on the issues associated with reducing emissions of greenhouse gases. Issues of concern included:

- The timing and scale of emissions reductions
- The availability of technology to reduce emissions
- The economics and equity of strategies to reduce emissions

Timing and Scale of Emissions Reductions

In response to a question from Abby Joseph Cohen of Goldman Sachs, Holdren said a possible goal might be to keep total greenhouse gas concentrations in the atmosphere at a level twice as high as at the beginning of the Industrial Revolution.[2] Some scientists consider this level safe and achievable, while others think less is both safer and achievable. To meet that target, we must start lowering emissions growth below expected levels by 2010. Total global emissions could grow at that slower pace to about 50% greater than today by 2035, and then total emissions must be lowered after that. Ultimately, society must reduce emissions by about 80% from today's levels to stabilize at that level.

Such change will take time. The capital investment in the current world energy system, 78% of which is fossil fuels that produce the predominant greenhouse gas CO_2, is roughly $12 trillion. Ordinarily that investment turns over on a time scale of about 30 years, or $400 billion per year. The world could not change that system overnight, even if it desperately needed to.

Rockefeller Brothers Fund President Stephen Heintz, Panetta Institute Director Leon Panetta, Kentucky Treasurer Jonathan Miller, and CERES Director of Investor Programs Chris Fox

Technological Options

Holdren identified several opportunities to reduce greenhouse gas emissions. In the short term, energy efficiency in buildings and transportation offers the greatest opportunity. In the somewhat longer term, we must bring technologies on line that capture carbon from coal combustion for electricity and sequester it. These technologies may save coal, and could allow developing countries such as China and India to leapfrog to cleaner, more efficient technologies. In response to a question from Jonathan Miller, Treasurer of Kentucky, about how close these technologies were to commercialization, Holdren said that these technologies are in use in two U.S. power plants, and more advanced technologies could be developed quickly if we attach a price to carbon dioxide. Cleaner methods of producing electricity such as wind energy and solar can make a big difference. The U.S. vehicle fleet, the second largest source of CO_2 in the country, has great opportunities for efficiency improvement. The U.S. should replace current engines with hybrid gas-electric vehicles in the short term and fuel cells in the long term.

Economics and Equity

It was noted that our ability to create new technologies and positive economics for addressing climate change primarily depends on the business community's capacity to innovate. For example, car makers in the 1970's claimed that catalytic converters were a technical and economic impossibility, but they produced them when forced to innovate.

Former Congressman Benjamin Gilman, representing the United States delegation to the United Nations, asked if the Kyoto Protocol was inequitable because it did not require leading developing countries to reduce their emissions. Professor Holdren replied that having differentiated responsibilities for industrialized and developing nations was important to developing countries. From their standpoint, the industrialized world has produced 75% of the greenhouse gases in the atmosphere today and must take the lead in solving the problem.

CWA/ITA Negotiated Pension Plan Chairman William Boarman asked about potential job loss as a result of emissions reductions to address climate change. Vice President Al Gore responded that China had just adopted auto fuel efficiency standards that are stronger than those in the U.S., leaving U.S. workers behind in the race for a cleaner car.

In addition, Leon Panetta argued that the jobs vs. environment argument has been used for decades by industries fearful of innovation, but in reality, innovation creates new jobs. He noted, "The companies and the countries that figure out first, and fastest how to deliver the goods and services that people want in energy-saving and environment-sparing ways, are going to make a lot of money at it. And the ones who don't figure it out, are going to be the ones who lose jobs."

"Your investments will have a decisive impact on trends in future greenhouse gas emissions and on our ability to adapt."

Kofi Annan

Importance of Climate Risk to Investors

Several of the leading speakers at the Summit addressed the importance of climate risk to investors. They suggested that the impacts from climate change predicted by scientists already pose risks to every investment portfolio. Others suggested that large emitters of greenhouse gases were particularly at risk as the world begins to reduce emissions. Secretary-General Annan also said, "Your investments will have a decisive impact on trends in future greenhouse gas emissions and on our ability to adapt."

CERES Senior Fellow Robert Massie, Connecticut Treasurer Denise Nappier, Connecticut Deputy Treasurer Howard Rifkin, Former Vice President Al Gore, and New York State Comptroller Alan Hevesi

Fundamental Transformation Under Way

Vice President Gore argued that the world has now entered a completely new stage of history, in which the relationship between the human species and the planet on which we live has been completely and utterly transformed.

Mr. Gore argued that climate change is radically changing the atmosphere—the most vulnerable part of our environment. The dramatic increases in the heat that is continuously transported by our climate to the North and South poles will change the stable climate patterns on which modern societies have depended for the last 10,000 years. Changes so vast create massive risk, which investors cannot ignore.

Climate Change Creates Risk from Physical Damages

Leon Panetta argued that powerful physical and financial forces are converging and have the potential to create financial havoc. These forces could impact investors, fiduciaries, and fund managers by damaging whole industries and creating huge and unexpected liabilities which put carefully protected assets at risk.

While reviewing the adverse economic impacts of unusual weather events in his home state of California, he noted that the insurance firm of Munich Re projects that climate change will cost the water industry alone $47 billion in the next 50 years and nearly $1 trillion in the next 70 years.

Swiss Re CEO John Coomber said that the increased number of natural catastrophes in every decade since the 1950s helped to convince his company, the second largest reinsurer in the world, that climate change is part of the problem.

Large Emitters Are at Risk

Climate change "creates an unpredictable environment, and an unpredictable environment is … the enemy of commercial enterprise."

John Coomber

Large emitters of greenhouse gases are particularly at risk as the world begins to address climate change. According to Panetta, "The likely increases in legislative, regulatory, trade and legal measures to address global warming exposes all companies, particularly those with significant emissions, and all portfolios in which those companies are held, to significant material and likely risks."

Investors Must Act

Many of the speakers urged investors to act now to consider these risks. The discussions by Summit participants made clear that there is a broad spectrum of perspectives among investors and in the broader financial community. This suggests that some actions may work well for some investors, while different actions are preferable for other investors.

John Coomber, CEO, Swiss Re

Panetta held that "in 2003 it is irresponsible for any major investor or fiduciary to ignore the risks of global warming."

Coomber said his own company had decided to address climate change because it had a corporate conviction that sustainability is simply "the right course." His firm's position is that a strong business case exists for addressing climate change, because the unpredictability of climate risk is "not good for sustaining shareholder value."

California State Treasurer Phil Angelides said: "In global warming, we are facing an enormous risk to the U.S. economy and to retirement funds that Wall Street has so far chosen to ignore. The corporate scandals over the last couple of years have made it clear that investors need to pay more attention to corporate practices that affect long-term value. As fiduciaries, we must take it upon ourselves to identify the emerging environmental challenges facing the companies in which we are shareholders, to demand more information, and to spur needed actions to respond to those challenges."

Connecticut Treasurer and Summit Co-Chair Denise Nappier said: "Companies that fail to adequately disclose the potential liabilities related to climate risk and financial analysts who ignore the potential financial risks of investments in these companies run the risk of fueling the next governance crisis. As investors, we can not afford any more casualties of corporate irresponsibility or regulatory loopholes."

These presentations sparked discussion regarding key issues for investors, including the:

- Role of the fiduciary
- Role of corporate boards
- Timeframe and perspective of investors

Role of the Fiduciary

In both morning and afternoon sessions, participants, especially those from pension funds, argued that their fiduciary duty required them to examine climate risk. Maine Treasurer Dale McCormick said her state-mandated duties had led her to seek disclosure of climate risk from companies. SEIU National Industry Pension Fund Director Steve Abrecht said fiduciaries

would be at risk if they did not address this issue. Sean Harrigan, President of the CalPERS Board, called it good corporate governance to examine climate risk. Rich Ferlauto, Director of Pensions and Benefits Policy for AFSCME, said that fiduciaries were already looking at the risk in individual stocks and of portfolio performance, while urging them to examine their duty of loyalty to the plan participants themselves.

Role of Corporate Boards

Kevin Greene, chairman of CRA RogersCasey Investment Consultants, asked what role members of corporate boards of directors should play, and whether they should consider costs of transition and competitive pressures. In the current world of more actively engaged boards, Leon Panetta argued that boards should at least conduct a climate risk analysis, and that the results would likely "raise eyebrows."

Short-Term Profits and Long-Term Value

Several participants questioned how the short-term focus of most investors could be reconciled with the long-term nature of the climate change issue. Mike Johnston of the Capital Group described his firm's failed green investments in the early 1990s to point out that it may not be possible to gain positive returns quickly enough. Maryland Treasurer Nancy Kopp urged more collaboration between pension funds, which should consider the long term, and labor unions, which often focus on the short-term. Paul Epstein of the Harvard School of Public Health asked what incentives and motivations could assist in promoting change.

Phil Angelides and others argued that investors, especially pension funds, must have a long-term investment perspective and re-orient their expectations and incentives for the long term. Others argued that disclosure was a good first step for any investor, whether focused on the short or long term.

CERES Executive Director Mindy Lubber and UN Secretary-General Kofi Annan

Actions Investors Can Take

During the course of the day, Summit speakers and participants presented a range of actions that investors can take to address climate risk. In effect, these suggestions constitute an initial set of best practices for investors on climate risk. Options presented include:

- Studying financial implications of climate risk of investments they make
- Seeking corporate disclosure of climate risk either through the SEC or companies
- Analyzing portfolio, sector, and company climate risk
- Exercising shareholder rights through proxy filing and voting
- Collaborating with other investors to seek action
- Committing to and reducing emissions from the institution or its investments
- Seeking out new investment opportunities and investing in them
- Developing new tools, such as emissions trading

Raise Awareness of the Risk

Swiss Re CEO John Coomber said that his company was committed to raising awareness of climate risk through meetings such as the Summit and through participation in the Carbon Disclosure Project, a cooperative effort of many large investors to seek information about carbon emissions from companies in the Financial Times 500. Swiss Re also published an initial paper on the risks of climate change, "Global Warming, Element of Risk," in 1994. It continues to promote research on climate risk, such as China's exposure to more extreme weather events.

Many participants in the meeting called for a greater commitment to educating others about the risk. Many felt that the presentation by John Holdren on the science of climate change was particularly useful. Iowa Treasurer Mike Fitzgerald expressed the view that, to the extent that educational efforts involved politicians, they needed to be bipartisan.

Summit Co-Host Amir Dossal, Executive Director, UN Fund for International Partnerships

Disclosure

Many speakers and participants called for investors to insist on more disclosure of climate risk. UN Secretary-General Annan said, "You can encourage corporations to voluntarily reveal information about how their operations affect and are affected by climate change."

Leon Panetta reminded the group, "The recent corporate governance scandals that we have seen, what they taught us is that disclosure, …and transparency, is the best medicine. Investors should demand that companies disclose those climate risks."

Participants proposed many specific actions for disclosure. Included in the 10-point Call for Action, which eight state and city treasurers and comptrollers and two major labor pension fund leaders released, was a strong demand for the SEC to enforce its existing requirements that companies disclose environmental liabilities, including climate risk.

In announcing the plan, New York State Comptroller Alan Hevesi said, "Today, we are taking aim at the SEC for not enforcing key rules on disclosure of environmental issues. We are focusing on corporate boards that come up short on corporate governance by failing to analyze and disclose environmental risks. And we urge Wall Street fund management firms to develop an analysis of climate change risk for portfolio companies and industries."

On the other hand, Abby Joseph Cohen of Goldman Sachs warned of the need to be careful about disclosure because of the need to meet accounting standards. In addition, she said the long-term nature of the climate issue makes analyzing it more complex. Instead, she suggested that other benchmarks be used, such as those contained in the June 2003 report from CERES and the Investor Responsibility Research Center examining how 20 leading U.S. corporations are factoring climate change into their business decisions. (For a copy of the report, visit www.ceres.org/reports/main.htm.)

Analysis

Many speakers and participants focused on the importance of developing better analysis of climate risks for portfolios, sectors, and companies. Leon Panetta, for example, said, "Investors should ask their investment advisers to develop their own analysis of climate risk. Even if the companies in which you are invested begin to disclose their views you must be prepared to have your own independent views of what exactly is involved with those risks."

Jonathan Lash of the World Resources Institute noted that much analysis of climate risk to date was less credible because the environmental community developed it, and that more was needed directly from the financial community. He proposed a research consortium in which environmentalists could advise, but financial firms and investors would control and support the research.

Bob Massie, CERES Senior Fellow, noted that CERES had developed a list of questions investors could ask their investment advisors.

Eileen Claussen of the Pew Center on Global Climate Change urged that the analysis look at corporate strategies for climate change in the short, medium, and long term. Peter Lehner of the New York state Attorney General's office urged investors to recognize the important role that states are playing and could play in addressing climate change, as analysis of the issue often focuses only on the role of national or international government agencies.

Klaus Toepfer, Executive Director, UN Environment Programme

Exercising Shareholder Rights

Many participants urged investors to exercise their shareholder rights by engaging directly with companies, filing shareholder resolutions, or supporting shareholder resolutions. During the 2003 shareholder season, for example, shareholders filed a record number of resolutions seeking corporate disclosure and action on climate change. Martin Kaplan of the V. Kann Rasmussen Foundation, Sister Patricia Wolf of the Interfaith Center for Corporate Responsibility, and Tim Smith of Walden Asset Management urged investors to get more active.

Several investors, such as Maine Treasurer Dale McCormick and CalSTRS CEO Jack Ehnes, explained that it was a high priority to focus on proxy policies and to be clear about how to cast proxy votes.

Reduce Investor Emissions

Several investors noted that they had already acted to reduce their own energy use or their greenhouse gas emissions, or those of their investments. John Coomber said that Swiss Re reduced carbon emissions 12% in 2002 by improving the energy efficiency of its office space, and was going to be greenhouse gas neutral in 2003. Phil Angelides said that CalPERS was aiming to improve the energy efficiency of its real estate holdings.

Identify New Opportunities and Invest

Several participants urged that investors identify new technologies and approaches that would flourish in a world with lower carbon emissions, and invest in them. California Treasurer and CalPERS Trustee Phil Angelides called for these investments and said that CalPERS planned to put some of its assets in environmentally screened funds. In addition, it has already created Smart Investments, a plan to redirect about a half a billion dollars a year in affordable housing funding to projects on transit corridors that beat state energy efficiency standards by 15%, while using sustainable building materials. In addition, CalPERS has created the Double Bottom Line: Investing in California's Emerging Markets initiative, which has invested about $8 billion into inner cities to help curb urban sprawl and reduce energy use and greenhouse gas emissions simultaneously.

John Coomber said that Swiss Re has created a new business unit called Greenhouse Gas Resolutions, which will help industrial companies measure their carbon emissions and promote ways of managing, reducing, and trading them.

Develop New Financial Tools

Other participants said that investors and others in the financial community could create new financial tools to assist in addressing climate risk. UN Secretary-General Kofi Annan said, "You could help to create the conditions for efficient emission trading systems, standardized accounting methods, and the like."

Getting Investors Organized

During his speech, Leon Panetta urged investors to get organized. He said, "There is power in numbers. Your ability to get good answers from companies or from the Securities and Exchange Commission and to analyze those risks will be greatly enhanced if you work together in a coordinated fashion."

As part of the 10-point action plan, eight state and city treasurers and comptrollers and two major labor pension fund leaders pledged to form an Investor Network on Climate Risk (INCR). The Network will follow through on the Summit and their Call for Action, and further promote investor and corporate engagement and understanding of the range of risks posed by climate change. CERES will serve as secretariat to INCR (www.incr.com).

Next Steps

In closing, CERES Senior Fellow Bob Massie reminded all participants that Conrad Henry once said, "Courage lies in the accumulation of small steps."

Many participants will no doubt take these small steps on their own.

However, investors interested in participating in future actions with other investors may wish to sign up for regular updates through the Investor Network on Climate Risk (www.incr.com). INCR will follow through on the Institutional Investor Summit on Climate Risk, and provide opportunities for investors to understand and analyze climate risk. The Network's website will include background materials from the Summit, and other materials that investors may find useful in addressing climate risk.

For more information on the Summit, the Network, or CERES, please contact **Chris Fox** (*fox@ceres.org*).

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Summit Co-Chairs and Summit Co-Host Mindy Lubber, Executive Director, CERES

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INCR Secretariat Background

CERES is a coalition of investment funds, environmental organizations, and other public interest groups. CERES' mission is to move businesses, capital, and markets to advance lasting prosperity by valuing the health of the planet and its people. CERES' investor members, representing over $400 billion in assets, include state and municipal pension funds, socially responsible investment firms, religious groups, union funds, and foundations.

Investor Call for Action on Climate Risk

November 21, 2003 • New York City

Signed by:

State Treasurers:

- **Phil Angelides**, Treasurer, State of California
- **Randall Edwards**, Treasurer, State of Oregon
- **Dale McCormick**, Treasurer, State of Maine
- **Denise Nappier**, Treasurer, State of Connecticut
- **Jeb Spaulding**, Treasurer, State of Vermont
- **Robert Vigil**, Treasurer, State of New Mexico

State and City Comptrollers:

- **Alan Hevesi**, Comptroller, State of New York
- **William Thompson**, Comptroller, New York City

Labor Pension Funds:

- **Steve Abrecht**, Executive Director, National Industry Pension Fund, Service Employees International Union (SEIU)
- **William J. Boarman**, Chairman of the Board of Trustees, CWA/ITU Negotiated Pension Plan

Background

Investors need information on the financial risks posed by climate change and faced by companies in which they invest. This information is not currently readily available. Investors are seeking analysis and disclosure of the potential of this financial risk.

Principles

As investors, we have come to understand:

- Climate change is one of the greatest challenges of the 21st century. How we address risks posed by climate change to our physical world will impact our economic and environmental future.
- Climate risk has become embedded, to a greater or lesser extent, in every business and investment portfolio in the United States. In order for investors to exercise appropriate judgment and for fiduciaries to act responsibly, disclosure of the potential economic risks posed by climate change is essential.
- Financial markets need to better understand and acknowledge the economic challenges and opportunities that climate change will compel.
- Corporations need to understand regulatory, statutory and legal efforts, internationally and domestically, aimed at regulating the emission of carbon dioxide and other greenhouse gases.
- Investors are currently hampered in their ability to assess and respond to the financial risks of global warming because existing rules on disclosure relating to material liabilities are not adequately enforced, fund management firms generally are not conducting sufficiently thorough analysis, and many companies are failing to adequately disclose relevant information related to potential dangers to their long-term revenues and assets.

Investors need the assistance of their financial managers, regulatory bodies, and public policy makers, as well as the companies themselves, in making this information available and clear.

10-Point Call for Action

We therefore call upon:

1. **The Securities and Exchange Commission (SEC)** to enforce corporate disclosure requirements under regulation S-K on material risks such as climate change and to strengthen current disclosure requirements – as requested by investors and others in recent petition to the SEC (File # 4-463). Current SEC disclosure regulations require registrants to disclose trends and uncertainties that are likely to have a reasonable impact on a company's operations. Studies show that many companies are failing to adequately disclose climate change-related risks to their shareholders in accordance with these rules. Furthermore, strengthening the current accounting rules governing the estimation and disclosure of environmental liabilities would lead to better transparency.[1]
2. **The Securities and Exchange Commission** to re-interpret or change its proxy rules under Section 14(a)-8 relating to "ordinary business" to recognize that shareholders should have the right to vote on resolutions asking their companies to report on financial risks that may be faced due to climate change.[2]
3. **Boards of directors** of companies under the principle of "duty of care" to ask corporate management to provide them with information and data on the potential financial risk to companies from climate change, and plans to mitigate any risk, and to report this information to shareholders.
4. **Companies in sectors that are the major source of greenhouse gas emissions** – including automobile manufacturing, electricity generation, and oil and gas production and refining – to prepare reports for shareholders detailing how the companies may be affected by regulatory, competitive, legal, and physical impacts of climate change and the costs of failing to respond to these issues.
5. **Companies that are not sources of greenhouse gases**, but whose operations may be affected by climate change, to analyze the potential impact of climate change on the companies and report the results of that analysis to shareholders.
6. **Investment managers**, who manage funds for institutional investors and who make recommendations for the buying or selling of stock, to include in their examination of corporations, sectors, and managed funds analyses of the potential financial impact of climate change.
7. **Institutional investors** – including mutual funds, pension funds, foundations, endowments – to adopt proxy voting guidelines which support the disclosure of the potential financial risks of climate change and to vote for shareholder resolutions requesting disclosure of this information.
8. **The U.S. Congress and the Executive Branch**, when developing policies to address greenhouse gas emissions, to assess the financial impact of climate change on the value of long-term investments.
9. **State Governments**, (and their regional organizations), to assess the potential financial impact of climate change on their states, and businesses that operate in them.
10. Finally, to follow through on the Institutional Investor Summit on Climate Risk and this Call for Action, and to further promote investor and corporate engagement and understanding of the range of risks posed by climate change, **we will support the creation of an Investor Network on Climate Risk (INCR)**. We have asked CERES, a U.S.-based coalition of investment funds and public interest groups, to serve as secretariat to INCR (www.INCR.com)

We believe that climate change may emerge as one of the most important financial risks of our time, with consequences that could affect us and our beneficiaries long into the future. We pledge to work together to deepen our understanding of climate change and will exercise our duty as pension trustees, fiduciaries, and investment professionals in response to the risks posed by climate change.

Investor Network on Climate Risk

www.incr.com

Purpose

The purpose of the Investor Network on Climate Risk (INCR) is to promote better understanding of the risks of climate change among institutional investors. INCR encourages companies in which its members invest to address any material risks and opportunities to their businesses associated with climate change and a shift to a lower carbon economy. Climate risk includes financial risk, fiduciary risk, liability risk and other forms of risk ensuing from climate change.

An Invitation

The INCR is open to any institutional investor that invests in U.S. markets and supports its purpose. Membership is open to investors who are interested in learning about and keeping abreast of climate risk. Details on membership will be available soon. If you would like to receive additional information, please complete and return the "INCR Request for Information Form."

Activities

INCR undertakes activities to increase understanding of climate risk, such as conferences, briefings, meetings, and the publication or distribution of reports. It supports further analysis of climate risk, and coordinates engagement of its members with companies and policy makers on climate risk. It aims to provide a forum in which its members can combine their knowledge of this complex and rapidly changing issue. INCR maintains a website (www.incr.com) to enable both its members and the public to gain access to this information.

Geographic Focus

INCR is specifically focused on climate risk in financial markets in the United States. It communicates with similar organizations in other countries, such as the Institutional Investors Group on Climate Change, which is based in London and focused on climate risk in European markets.

Management

CERES is the INCR Secretariat. To learn more about how you can participate in INCR, contact **Ariane van Buren** (vanburen@ceres.org) or **Chris Fox** (fox@ceres.org). Mailing address: CERES 99 Chauncy Street, Boston, MA 02111. Tel: 617-247-0700 x15 Fax: 617-267-5400. Website: www.incr.com

Appendix: Overview of Climate Risk Facing Investors

This summary was prepared by CERES based on CERES' Value at Risk: Climate Change and the Future of Governance and other research.

Global warming — one of the most significant economic and environmental challenges facing the world today — has also emerged as a key strategic issue for corporations and institutional investors.[1]

Two key trends are pushing it to the top of investors' and corporations' agendas. They are:

- Stronger scientific evidence that:
  - Pollution levels are rising rapidly and will continue to do so;
  - Adverse effects on our physical environment and public health are occurring now and will worsen substantially over the next century; and
  - Humans are responsible.
- Increasing government actions to limit greenhouse gases internationally through the Kyoto Protocol and domestically in the U.S. through state regulations such as those in California, New Hampshire and Massachusetts. Many experts now believe that U.S. regulation of carbon dioxide and other greenhouse gases will occur in the next 10 years.[2]

These trends have embedded climate risk in virtually every investment portfolio. This risk falls into two broad categories: first, the exposure of companies that emit greenhouse pollutants to a rapidly expanding web of legislative, civil and tort actions that are developing around the world; and, second, the risk that some sectors and businesses face from the direct physical impacts of climate change.

The Science of Global Warming

When greenhouse gases, such as carbon dioxide, are released into the atmosphere, they trap the sun's rays and subsequently cause a warming effect on the earth's surface. As the earth warms, its climate system changes. The major sources of greenhouse gases are combustion of fossil fuels, industrial processes, and deforestation. In the U.S., the leading sources of carbon dioxide are electricity generation, transportation, and manufacturing.

The Intergovernmental Panel on Climate Change (IPCC), the leading international scientific body that assesses climate change, has found that global warming is already occurring. The global average surface temperature has increased 1 degree Fahrenheit since the late 19th century. It is very likely that the 1990s was the warmest decade in the last 1000 years, and 1998 was the warmest year since 1861, when instrumented records began.

If emissions of greenhouse gases continue to rise, this warming trend will continue. Based on current emissions forecasts, the planet will experience additional warming of approximately 2.5 to 10.5 degrees Fahrenheit by 2100[3], a rate of warming greater than at any other time in recorded history. This warming trend could significantly impact the earth's climate system as well as ecological, economic and social systems. Among other effects, scientists expect that global warming will cause:

- Sea levels to rise by as much as 34.6 inches by 2100, making coastal groundwater saltier, endangering wetlands, and inundating valuable land and coastal communities;
- Precipitation patterns to change, especially in already water-scarce regions that are likely to suffer from further decreasing rainfall;
- The ranges and abundance of plants and animals to shift dramatically, with some unable to adapt or migrate to new locations;
- Forests, ecosystems, and agriculture to experience severe stress;
- Serious human health impacts, such as increasing heat stress, worsening air pollution, declining water quality, and the spread of infectious diseases into regions previously free from them.

The impacts of global warming will vary by country and region.[4] Failing to address global warming will have significant negative effects on economies around the globe.

Key Sectors Facing Regulatory and Other Risks

As governments around the world begin to take action to reduce the pollutants that cause global warming, the companies with significant emissions from their operations or products face increasing risk that they must invest in emissions controls. Combustion of fossil fuels and deforestation create significant emissions of carbon dioxide (CO_2), the primary contributor to global warming. To control emissions, governments will focus on sectors that produce or use significant amounts of energy and those involved in land use. Scientists say that to stabilize atmospheric concentrations, the world must cut its CO_2 emissions by 80% in the next 50–100 years. This shift creates risks for those with dirty technologies and approaches, while creating opportunities for those with clean ones.

Key sectors that may need to reduce their emissions over time include:

- Electric power
- Forestry
- Manufacturing
- Oil and gas
- Transportation and automobiles

The trend toward regulation of carbon dioxide is clear. The Kyoto Protocol is taking effect internationally, some states are already regulating CO_2 (CA, MA, NH), and others are considering it. Regional efforts are also being developed – the six New England states, in partnership with five eastern Canadian provinces have committed to aggressive CO_2 reductions. The question is no longer *if* carbon will be regulated at the federal level, but *when*, and *how*.

Pending controls on carbon dioxide and other greenhouse gases pose significant risks for investors, and these risks are likely to vary widely among companies.

- **Electric Power.** The financial impacts of air quality and climate change regulations are material for the electricity sector, the source of 40% of U.S. and 10% of worldwide CO_2 emissions. If proposed legislation is enacted, more than half of the companies will face compliance costs of 10 percent of their total year 2000 revenues (net present value). Under certain scenarios, two companies could face compliance costs of more than 50% of 2000 revenues.[5] Under a modest regulatory scenario, many U.S. electric utilities face a carbon exposure of between 5 and 10 percent of market capitalization. Under a more aggressive scenario, many U.S. electric companies face a carbon exposure of between 10 and 35 percent of market capitalization. Financial risks vary from 11.5% of current market value "at risk" for American Electric Power to 0.9% for Exelon.[6]
- **Automobiles.** Auto manufacturers in the Financial Times 500 vary by a factor of 35 times in terms of reported carbon dioxide per vehicle sold or produced.[7]
- **Rail.** If U.S. electric utilities switched 4% of coal consumption to natural gas in order to reduce emissions, then total revenues at the two largest U.S. rail companies could decline by nearly 11% of 2001 net income.

Major emitting companies also may face other risks. Some states, small island nations adversely affected by sea level rise, and others who have been damaged by severe storm events, fire, or flooding are exploring tort litigation against major emitters.

Key Sectors Facing Physical Risks

Sectors and businesses affected by or dependent on human health, the physical environment, water, and weather are particularly at risk. Under any scenario, the costs and burdens of climate change will fall disproportionately on different sectors and regions. A 2001 study warned that the water industry alone could face $47 billion of extra costs by 2050 and nearly $1 trillion by 2070.[8]

Studies have identified the following global industries as particularly vulnerable:

- Agriculture
- Fisheries
- Forestry
- Health care
- Insurance
- Real estate
- Tourism
- Water

Some industries and regions are already experiencing costs from climate change. In Alaska, for example, winters have already warmed at least 8 degrees Fahrenheit since the mid-1960s. This is affecting transportation (roads are collapsing with the melting permafrost); forestry (beetles that no longer die in winter are putting timber assets at risk); and petroleum

(oil companies that used to be able to start hauling heavy equipment across the tundra in November now have to wait until January for adequate snow cover).

Significant weather events indicate future risks as climate change worsens. There are four times as many weather-related natural disasters as 40 years ago, causing 11 times the insurance losses ($10 billion per year). According to Munich Re, natural disasters caused $55 billion in damages in 2002. A drought in 2002 cost farmers and businesses in Australia – the world's second largest wheat exporter – A$3.8 billion, reduced winter crop production by 40%, and increased food prices by 1.4% in the final three months of the year. Droughts in 2002 in the western United States and Canada caused hydroelectric output to fall as much as 15% and cut grain transportation revenues by 13% at CN, a large rail firm.[9]

Competitiveness Risks

Many companies and investors also recognize that positive and proactive measures to address global warming can also reap significant benefits for shareholders. Companies with clean technologies or approaches may seize new markets or market share. Several recent studies demonstrate these financial benefits:

- A diversified portfolio of more "sustainable" companies earned 1.5–2.4% (150 to 240 basis points) more than their competitors. In certain high-risk sectors, such as chemicals and petroleum, the gain was as great as 5% (500 basis points).[10]
- Electric utilities with above average environmental management earned 30% greater total shareholder return over three years than below average companies.[11]
- Markets for energy produced from renewable sources, such as solar and wind, are expected to grow to $1.9 trillion by 2020.[12]

Proactive environmental management also enhances reputation with employees, consumers, and the public, while negative actions may hurt. ExxonMobil is the target of boycotts in the United Kingdom due to its opposition to climate change action.

Companies, especially in manufacturing, are cutting costs and emissions by improving efficiency. The energy company BP, for example, has reduced emissions in fuel and gas venting and flaring, while achieving savings of $650 million in net present value.[13] Deutsche Telekom has saved DM 8 million in energy costs and reduced emissions with simple air conditioning changes.[14]

How Companies are Responding to the Risk

The corporate response to climate risk has ranged from indifference to aggressive planning and action. But most companies are doing a poor job responding to this increased risk. Despite SEC requirements to disclose environmental liabilities, companies are not disclosing the financial risks associated with global warming, and especially the risks associated with the increasingly likely future regulation of carbon dioxide.[15] In a recent study, eight major companies – Alcoa, ChevronTexaco, ExxonMobil, General Electric, General Motors, Honda, IBM, and International Paper – made no mention of climate change or related issues in their 2001 Form 10-K or Form 20-F securities filings.[16] Increasingly concerned investors have filed resolutions seeking increased disclosure, but have had limited success in changing corporate practices. Uniform reporting and disclosure standards are being developed, and the SEC and industry should adopt them. Moreover, there is little financial analysis of these risks, and many companies and investors lack the tools or understanding to analyze them.

What Investors Can Do to Address Climate Risk

Many institutional investors in the United States are already acting to address embedded climate risk. Many are doing so because climate risk is a serious long-term threat to the preservation of investment value. This paper offers a short list of 10 actions that investors can take to address climate risk. This list is not exhaustive, but includes examples of important steps that some investors are taking today.

1. Seek expert advice on climate risk.

Very few investment managers and securities analysts have the specialized skills or experience necessary to quantify a company's exposure to climate risks. There are, however, a growing number of world-class authorities with expertise in the technical, policy, and financial aspects of climate change. Institutional fiduciaries would be derelict in their responsibilities if they failed to utilize those resources where necessary.

2. Undertake a portfolio-wide assessment of risk exposures.

Climate risk varies widely among industry sectors. Even within the same sector, according to a recent study, the risk can vary by as much as sixty times. As fiduciaries of other people's money, institutional investors must understand and control their relative level of risk exposure. Over time, this should become part of investment managers' overall risk management processes. As owners of the firms in which they hold shares, institutional investors can ask their fund managers to research climate risk. (See Section 3C of this briefing package for a list of questions you can ask your fund managers and financial advisors about climate risk.)

3. Incorporate climate change considerations into overall investment strategies.

All institutional investors – including mutual funds, pension funds, foundations, and endowments – can establish a policy about climate risk. Pension fund trustees can state their policy toward embedded climate risk in their statement of investment principles. Mutual fund portfolio managers can incorporate climate risk into their assessments of individual companies, industry sectors, and entire investment portfolios.

4. Request – and if necessary, demand – greater disclosure of climate risks by companies wishing to be considered as investment candidates.

The failure of companies to adequately disclose climate change related risks to their shareholders is a major barrier facing investors as they assess climate risks. Many investors are now seeking greater disclosure. The Carbon Disclosure Project, a group of 35 investors, has written to companies in the Financial Times 500 seeking disclosure of climate risk information (http://www.cdproject.net/). Other investors, such as Connecticut Treasurer Denise Nappier, have filed shareholder resolutions seeking disclosure of climate risk. Investors are also asking the Securities and Exchange Commission (SEC) to enforce and strengthen corporate disclosure requirements. Current SEC disclosure regulations require registrants to disclose trends and uncertainties that are likely to have a reasonable impact on a company's operations. In some European countries, such disclosure is now being mandated by legislation or demanded by the largest institutional investors.

5. Join the Investor Network on Climate Risk.

Institutional investors can also join their peers in the Investor Network on Climate Risk (INCR). This network aims to promote investor and corporate engagement and understanding of the range of risks posed by climate change in U.S. financial markets. CERES is the INCR Secretariat. To learn about how you can participate in INCR, contact Ariane van Buren (vanburen@ceres.org) or Chris Fox (fox@ceres.org). Mailing address: INCR c/o CERES, 99 Chauncy St., Boston, MA 02111. Tel: 617-247-0700x15. Fax: 617-267-5400. Website: www.incr.com.

6. Vote proxies in support of climate change shareholder resolutions.

Institutional investors can support climate change shareholder resolutions. During the 2003 shareholder season, shareholders offered record numbers of climate change resolutions, many seeking disclosure of climate risk from companies. The resolutions achieved record vote totals, especially at companies with significant greenhouse gas emissions. Climate change is expected to be a significant issue in 2004 as well.

7. Make public statement regarding climate risk.

Companies are more likely to address climate risk if they perceive growing shareholder concern. Institutional investors can publicize their own review of climate risk, their intent to vote for climate change shareholder resolutions, or a new policy regarding climate risk.

8. Invest in climate-friendly, clean energy opportunities.

There are many promising investment opportunities among smaller companies that are developing and commercializing new clean energy technologies such as fuel cells, microturbines, and solar power. Those major institutions which are already investing heavily in unlisted, privately held companies simply need to shift to climate-friendly technologies. Companies can directly contribute to minimizing the adverse effects of climate change by shifting investments to these smaller companies, and the economic prospects of many of them are attractive indeed. Some innovative asset managers have recently created new mutual funds whose stock selection is oriented towards companies with superior strategic positioning and lower risk regarding climate change, such as T. Rowe Price's "Clean Future Fund."

9. Promote the universal adoption of the Greenhouse Gas Reporting Protocol recommended in the Global Reporting Initiative's reporting guidelines.

The more that greenhouse gas reporting can be done using a common, standardized format, the easier it will be for institutional investors and other stakeholders to assess and compare company performance, and to encourage both top performers and laggards to move to a higher performance level. For more information, see www.globalreporting.org/.

10. Support government action to limit global warming pollution.

Companies and investors currently face tremendous uncertainty regarding the future course of climate change regulation in the United States. Many investors believe that this uncertainty creates substantial business risk, and is the least optimal path forward. Recently, a group of investors and electric power companies joined together to support a limit or "cap" on greenhouse gas emissions to provide certainty for electric companies and their investors.

Investor Network on Climate Risk (INCR) Secretariat

For more information on the Summit, the Investor Network on Climate Risk, or investor responses to climate change, please contact

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CERES is a coalition of investment funds, environmental organizations, and other public interest groups. CERES' mission is to move businesses, capital, and markets to advance lasting prosperity by valuing the health of the planet and its people. Investor members, representing over $400 billion in assets, include state and municipal pension funds, socially responsible investment firms, religious groups, union funds, and foundations. Founded in 1989, CERES is the institutional home of the CERES Principles, a 10-point code of corporate environmental conduct. Today more than 70 companies have endorsed the CERES Principles, including Bank of America, Baxter International, Coca-Cola, Ford, General Motors, Nike, and Sunoco. From 1997 to 2002, CERES partnered with the United Nations Environment Programme to create the Global Reporting Initiative, an international, multi-stakeholder effort to create a common framework for reporting the economic, environmental and social impacts of corporate activity. Today, the CERES Sustainable Governance Project is bringing together the sustainability and corporate governance movements to improve corporate and public policies on climate change and other social, environmental and governance issues.

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Endnotes

1 This paper uses the terms "global warming" and "climate change" interchangeably.

2 The timeframe for this action on global warming parallels the timeframe for retirement of the "baby boom" generation in the United States, thus linking the need for fiduciaries to address global warming issues to ensure long-term value for beneficiaries.

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