



June 25, 2013

The Honorable Mary Jo White
Chairman
United States Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549

Re: Increasing Materiality of Climate Change

Dear Chairman White:

We are writing with information on the increasing financial impacts of climate change and its effects upon registrants and investors. Ceres and 21 other petitioners, including members of Ceres' Investor Network on Climate Risk (INCR), submitted a formal petition in 2007 outlining the business risks of climate change and encouraging the Commission to release interpretive guidance on climate change.¹ Since the Commission issued its 2010 interpretive guidance on climate change, we have been monitoring the economic and business impacts of climate change, as well as the quality of disclosure by listed companies of material climate risks and opportunities. This letter outlines the major—and increasing—physical and regulatory impacts from climate change and discusses how climate change can be material to a number of companies. We ask that the Commission devote greater attention to this issue, in accordance with the interpretive guidance, as it reviews companies' financial filings.

INTRODUCTION

In recent years, climate change has been increasingly recognized as a major financial risk, with myriad impacts on businesses and regional economies. Climate change affects virtually every sector of the economy, presenting both risks and opportunities for companies. The materiality of certain climate change-related impacts for some registrants was recognized in the Commission's 2010 climate change guidance. With recent increases in extreme weather events linked to climate change, resulting economic impacts and increasing U.S. and global regulatory responses, the materiality of climate change as a business risk and opportunity is increasing.

INCREASING PHYSICAL IMPACTS OF CLIMATE CHANGE

Scientific consensus has long held that climate change is likely to exacerbate extreme weather events. Climate change impacts are occurring now, and recent climatic changes have exceeded earlier scientific projections. Climate change has already increased the frequency and/or intensity of the following four types of extreme weather events: more pronounced heat, heavy precipitation events, droughts, and drought-associated wildfires. Rising sea levels due to climate

¹ *Request for Interpretive Guidance on Climate Risk Disclosure* (Sept. 18, 2007) (File No. 4-547). Available from http://www.ceres.org/files/SECFullPetition.pdf/at_download/file

change (and the higher storm surges that result from this), as well as warmer sea surface temperatures, are expected to make tropical cyclones, including hurricanes, more intense and destructive.² Hurricane Sandy is a likely example of these effects.

Physical Risks from Climate Change: A Guide for Companies and Investors on Disclosure and Management of Climate Impacts, published by Ceres, Calvert Investments and Oxfam America in 2012, demonstrates that companies are already experiencing financial impacts from the types of extreme weather events exacerbated by climate change and provides physical risk disclosure examples from 10-K filings.³ The SEC's *Commission Guidance Regarding Disclosure Related to Climate Change* ("Guidance") states that **physical impacts from climate change** are one of four potentially material issues that companies may need to disclose in their securities filings.⁴

More pronounced heat

Global average land and ocean temperatures have increased measurably due to climate change, and extremely hot summers are now 40 times more frequent. The number of new record highs recorded each year is now double the number of new record lows—60 years ago, they were approximately the same.

- Railroad company Union Pacific stated in its 2012 10-K that an unseasonably warm winter contributed to volume declines in coal, reducing freight revenue from coal shipments in 2012 compared to 2011. The company also cited an \$18 million increase in operating expenses for 2011 over 2010 due to the impact of severe heat and drought in the South, primarily Texas (in addition to a \$20 million increase for costs related to the Midwest flooding).
- Pipeline and energy delivery company Enbridge stated that increases in the number of hot days across North America presents current opportunities for the company in the form of increasing demand for existing products/services (its distributed gas fired generation), since the increasing temperatures will put the electric grid at greater risk of brownouts.

Heavy precipitation events

A warmer atmosphere holds more moisture. Evidence shows that due to climate change, precipitation is more concentrated into heavy downpours. This heavy precipitation is contributing to increased flooding. In addition, large swings between flood and drought are a pattern consistent with climate change. Recently, the middle Mississippi River experienced its worst drought in 50 years, drastically reducing transport along the river and putting more than \$7 billion worth of goods at risk of not reaching their destination. The drought came one year after historic flooding in 2011 that damaged agriculture.

- Catastrophic flooding in Thailand in 2011 caused massive disruptions for manufacturers.

² U.S. Global Change Research Program. 2013. *Draft Third National Climate Assessment Report*. Available from <http://ncadac.globalchange.gov/>

³ Ceres, Calvert Investments and Oxfam America. 2012. *Physical Risks from Climate Change: A Guide for Companies and Investors on Disclosure and Management of Climate Impacts*. Available from <http://www.ceres.org/resources/reports/physical-risks-from-climate-change/view>

⁴ U.S. Securities and Exchange Commission (SEC). 2010. *Commission Guidance Regarding Disclosure Related to Climate Change*, 17 CFR Parts 211, 231 and 241. Available from <http://www.sec.gov/rules/interp/2010/33-9106.pdf>

- Honda stated that the heavy floods resulted in a ¥23.420 billion loss as a result of inundation of automobile assembly plants and other flood-related events.
- Toyota's supplier's plants suffered declines in both the volume of production by 0.24 million vehicles, and the operating profits by 0.1 trillion yen.
- Con Edison has noted that an increased frequency and intensity of precipitation events can cause damage to critical infrastructure. It stated that events like these are virtually certain to occur at present, and the magnitude of impact of the company will be medium to high.

Drought

Climate change drives drought through changes in precipitation and temperatures. There has been an increase in drier, hotter areas –and dry areas are becoming drier – a result of the warming of the atmosphere. Water supply availability is already decreasing in many parts of the U.S. The 2012 drought in the Midwest, Great Plains and South impacted companies' earnings due to the widespread crop failure, and the total estimated economic impact is \$30 billion.

- In its first quarter financial results, agricultural commodities producer Archer Daniels Midland Co. reported net earnings of \$269 million, or \$0.41 per share, down from \$0.60 per share in the same period one year earlier. The company cited the ongoing effects of last summer's drought in the U.S. for the decline.
- A new Ceres report found that almost half of the hydraulic fracturing (“fracking”) wells—major water users—that were analyzed were in water basins with high or extremely high water stress.⁵ In Colorado and North Dakota, energy companies are paying up to 10 times more than farmers generally pay to secure increasingly scarce municipal water.

Wildfires

Wildfires associated with droughts and high temperatures are becoming more frequent and severe due to the changing climate. Seasonal and multi-year droughts can increase wildfire severity. Last year was the third-worst fire year in U.S. history, and the annual U.S. fire season now lasts about 75 days longer than it did 40 years ago.

- As an example of the impact of climate change on catastrophe exposure, insurer The Hartford cited in its 2012 10-K more frequent brush fires in certain geographies due to prolonged periods of drought.
- Penn West Exploration, an oil and natural gas producer, stated that a higher risk of wildfires driven by lower precipitation levels could threaten its field facilities and production capacity.

Stronger tropical cyclones

Tropical cyclones will likely become more intense, with higher wind speeds and heavier rains. Scientists state with certainty that higher mean sea levels increase the frequency, magnitude and duration of coastal flooding associated with a given storm. Average global sea level has risen approximately 8 inches since 1880. Business-as-usual emissions are predicted to result in additional global sea level rise of 1 foot by 2050, if current ice sheet melting rates continue (and more if they accelerate from increased warming). The Atlantic coast of North America is

⁵ Ceres. 2013. *Hydraulic Fracturing & Water Stress: Growing Competitive Pressures for Water*. Available from <http://www.ceres.org/press/press-releases/new-study-hydraulic-fracturing-faces-growing-competition-for-water-supplies-in-water-stressed-regions>

experiencing accelerated sea level rise. In the New York harbor, sea levels have risen nearly a foot over the last century. Elevated sea levels increased the reach of Superstorm Sandy's storm surge, which was up to 15 feet on the shores of New York and New Jersey, causing extensive damage. Climate change is also expected to strengthen tropical cyclones by increasing sea surface temperatures, a key factor influencing cyclone formation and behavior.

- Electric power company Entergy stated that in recent years, "hurricanes Katrina, Rita, Gustav and Ike have provided a glimpse into what increased frequency and severity of tropical cyclones will be like under some of the climate change scenario predictions." The company estimated that restoration costs as a result of Hurricanes Katrina and Rita were \$2 billion.
- Insurer Travelers Group noted that climate change could impact "the creditworthiness of issuers of securities in which the Company invests...more frequent and/or severe hurricanes could impact the creditworthiness of issuers in the Southeastern United States."

INCREASING REGULATORY RISKS AND OPPORTUNITIES

In response to the increasing physical risks and impacts from climate change, governments in and outside the U.S. have recently enacted various legislation and regulations to reduce greenhouse gas (GHG) emissions and attempt to mitigate climate change. As such, policymakers are actively shaping the risks and rewards to businesses as society starts shifting toward a low-carbon economy. The World Bank reports that more than 60 governments around the world have either put in place carbon-pricing schemes or are planning one for the years ahead, including carbon taxes or some form of cap-and-trade. The *Guidance* cites **impact of international accords** and **impact of legislation and regulation** as potential material issues that companies may need to disclose in their securities filings.

Regulations pose not only risks to companies' bottom lines, but also business opportunities for innovation and value creation. Investors need to know how companies are assessing and responding to these risks and opportunities. What follows is a list of key recent and upcoming climate-related policies at the local, state, regional, federal and international levels.

National Policies

- U.S. Environmental Protection Agency (EPA) regulations under the Clean Air Act (CAA)
 - EPA has authority under Section 202(a) of the CAA to regulate air pollutants that endanger public health and welfare, and EPA found GHGs to be a threat to public health and welfare in findings published December 7, 2009.
 - Major stationary sources of GHG emissions, including power plants, were required to report their GHG emissions to the EPA beginning January 1, 2010.
 - In May 2010, the EPA issued its final "Tailoring Rule" setting the thresholds for air permitting requirements for large stationary sources of GHG emissions.
 - In March 2012, the EPA released its proposed New Source Performance Standard limiting GHG emissions from new fossil-fired power plants. The final rule remains pending. EPA is also considering and expected to issue regulations limiting GHG emissions from existing power plants, although the timing and details are uncertain.
- U.S. Department of Transportation
 - Last year's new Corporate Average Fuel Economy (CAFE) standards are projected to reduce GHG emissions from U.S. cars and light trucks by 50 percent by 2025. Fuel

efficiency is now a major selling point and competitive advantage for all major auto manufacturers.

- In coordination with the Department of Transportation fuel economy standards, the EPA finalized GHG emissions standards for new light-duty motor vehicles in 2010, and standards for medium- and heavy-duty vehicles in 2011.
- A federal interagency working group has increased its estimates of the “social cost of carbon” as a result of changes in the modeling methods, including for agriculture and sea level rise: \$12, \$43 and \$65 per metric ton of CO₂ in 2020 (using discount rates of 5.0, 3.0, and 2.5 percent, respectively). The Administration will use the estimates in determining the costs and benefits of key regulations.

Local, State and Regional Legislation, Regulations and Policies

- California Global Warming Solutions Act (AB 32)
 - California—the world’s ninth largest economy—adopted a cap-and-trade program in 2011. The initial cap on GHG emissions first took effect January 1, 2012, and the first auction of GHG emission allowances was held in December 2012. The program covers major sources of GHG emissions in the state (including refineries, transportation fuels, industrial facilities and power plants), and includes an enforceable, declining GHG cap.
 - The California Low Carbon Fuel Standard (LCFS), a component of AB 32, mandates a 10 percent reduction in the carbon intensity of fuels by 2020.
- Thirty-eight states have a Renewable Portfolio Standard, Alternative Energy Portfolio Standard, or Renewable or Alternative Energy Goal in place.
 - These initiatives generally require that electric utilities deliver a certain amount of electricity from alternative or renewable energy sources (such as hydro, solar, wind), which may have higher (or at some point lower) costs than conventional sources.
- Property Assessed Clean Energy (PACE) financing has been authorized through legislation in at least 26 states.
 - Local governments utilize PACE programs to finance energy efficiency and renewable energy projects on commercial, industrial and residential properties.
- Regional Greenhouse Gas Initiative (RGGI)
 - RGGI is a regional cap-and-trade program comprised of nine states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont. RGGI, the nation’s first market-based regulatory program to reduce GHG emissions from power plants, held its first carbon auction five years ago.
 - In February 2013, RGGI announced several significant changes that will increase its impact, including a 45 percent reduction of the 2014 regional CO₂ budget or “RGGI cap”.
- In February 2012, insurance commissioners from California, New York and Washington announced that insurance companies licensed to operate in any of these states writing more than \$300 million in direct written premiums will be required to respond to the National Association of Insurance Commissioners (NAIC) Climate Risk Survey. The insurers must disclose their climate change-related risks and strategies for addressing those risks.⁶

International Policies

⁶ Responses to the climate risk disclosure survey are available from <http://www.insurance.ca.gov/0250-insurers/0300-insurers/0100-applications/financial-filing-notices-forms/annualnotices/ClimateSurvey.cfm>

- The European Union Emissions Trading Scheme (EU ETS) was the first large emissions trading scheme in the world (launched in 2005 as part of the Kyoto Protocol) and it remains the largest. As of January 2013, it covers more than 11,000 factories, power stations and other industrial sources of GHG emissions. For U.S. companies with covered operations in Europe, disclosure of regulatory costs and risks related to the EU ETS may be required in SEC filings.
- Australia
 - The carbon tax, enacted in July 2012 starting at AD\$23 per ton, levies a tax on Australia's 300 largest emitters, as well as providing renewables/efficiency incentives.
 - In 2015, this will transition to a cap-and-trade system, with links to the EU ETS.
- Canada
 - Alberta's carbon tax charges CAD\$15/ton for GHG emissions that exceed set limits on emissions intensity. Alberta also has a requirement for oil sands companies to file compliance reports showing how each facility met emissions intensity targets.
 - British Columbia's carbon tax was introduced in July 2008 at a level of CAD\$10 per ton, and has gone up CAD\$5 per year to reach CAD\$30 a ton as of July 2012.
- China
 - Announced that it is developing what will be the world's second-biggest emissions market via a national cap-and-trade system anticipated to start in 2020 with a pilot program commenced in September 2012.
 - China currently has a goal to reduce carbon intensity (emissions per dollar of economic output) by 40-45 percent in 2020, from 2005 levels, which will require significant increases in energy efficiency across multiple sectors.
- South Korea
 - The emissions trading scheme, adopted in 2012 and commencing in 2015, will cover individual facilities with annual GHG emissions of 25,000 tons and companies with annual GHG emissions of more than 125,000 tons.
- At the 2011 United Nations Climate Change Conference in Durban, a decision was reached to achieve agreement on a global climate treaty by 2015 that will take effect in 2020, in order to avoid a rise in global average temperature of more than 2 degrees Celsius above pre-industrial levels, which scientists deem a critical threshold in preventing catastrophic climate change (the COP-17 Accord). International negotiations toward this goal are currently in progress.

CONCLUSION

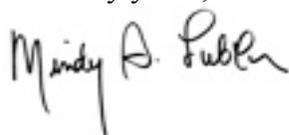
Levels of CO₂—the longest-lived of the GHGs—are higher now than any time in at least the last 800,000 years, and global GHG emissions continue to increase. A new International Energy Agency (IEA) report warns that global temperatures are currently on track to rise between 3.6 and 5.3 degrees Celsius. Past GHG emissions have already committed the world to decades of rising temperatures and climate impacts. Beyond that, impacts will depend upon future GHG emission reductions. A noteworthy recent study by the Carbon Tracker Initiative analyzed the CO₂ embedded in the world's proven fossil fuel reserves owned by listed companies (based on reserves estimates from the IEA) and found that only 20 percent of the reserves can be burned between now and 2050 to avoid exceeding the 2-degree scenario—suggesting a “carbon bubble”

and risk of significant stranded assets may exist with significant valuation implications for these energy companies.⁷

Climate change is an increasingly material risk to a growing number of companies and sectors, resulting from both physical and regulatory risks—both of which are increasing. As such, climate change, and its regulatory responses, physical impacts and resulting business risks and opportunities, is clearly a current known trend that should be considered and disclosed by registrants where material. We ask that the Commission devote greater attention to this issue, in accordance with the *Guidance*, as it reviews companies' financial filings, such as by issuing comment letters to companies.

We are reaching out to schedule meetings with you in the coming months to discuss these issues in further depth. If you require additional information, or have thoughts or questions, please do not hesitate to contact me at 617-247-0700 ext. 130 or lubber@ceres.org.

Sincerely yours,



Mindy S. Lubber
President, Ceres

cc: Commissioner Luis A. Aguilar
Commissioner Elisse B. Walter
Lona Nallengara, Chief of Staff
Keith F. Higgins, Director, Division of Corporation Finance
Shelley Parratt, Deputy Director (Disclosure Operations), Division of Corporation Finance
Jeffrey Riedler, Assistant Director (Healthcare and Insurance), Division of Corporation Finance
Karen Garnett, Associate Director (Healthcare and Insurance), Division of Corporation Finance
Mara Ransom, Assistant Director (Consumer Products), Division of Corporation Finance
Paul Belvin, Associate Director (Consumer Products and Transportation and Leisure), Division of Corporation Finance
Roger Schwall, Assistant Director (Natural Resources), Division of Corporation Finance
Barry Summer, Associate Director (Natural Resources), Division of Corporation Finance
Max Webb, Assistant Director (Transportation and Leisure), Division of Corporation Finance
Rich Ferlauto, Deputy Director of Policy, Office of Investor Education and Advocacy
INCR SEC Disclosure Working Group

⁷ Carbon Tracker Initiative. 2012. *Unburnable Carbon 2013: Wasted Capital and Stranded Assets*. Available from <http://carbontracker.live.kiln.it/Unburnable-Carbon-2-Web-Version.pdf>