



ACCLIMATISE
building climate resilience

Corporate disclosure of physical climate change risks and adaptation

Client note

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Increasing investor pressure for disclosure of physical climate change risks and adaptation

Climate risk management is increasingly of interest to investors. In order to make informed decisions, the investment community is beginning to seek greater transparency about climate-related risks and opportunities faced by the companies in which they invest.

In recent years, the number of climate-related shareholder resolutions filed has increased considerably, especially with power, oil and gas and mining companies. The number of climate-related shareholder resolutions filed during the 2010 proxy season increased by 50% over 2009 (Ceres, 2011a). Although the majority relate to greenhouse gas (GHG) emissions, there is growing evidence that investors are seeking disclosure on the material impacts of a changing climate. During the 2011 proxy season, 1 in 6 resolutions relative to climate, energy, water and sustainability, call for greater disclosure of risks and impacts arising from a changing climate (Ceres, 2011b). Examples of recent shareholder resolutions are provided in the margin.

Many climate-related resolutions request information on company climate change strategies. Some go further by calling for executive compensation aligned with climate change performance. Although most resolutions focus on existing and future regulatory constraints and their associated costs, a few look at the operational impacts of physical climate change, such as reduced water resources in the mining industry, or increased magnitude of tropical storms in the oil and gas sector. Many resolutions are withdrawn following commitments given by a company to improve climate change disclosure.

Despite ongoing improvements, investors have criticised the quality and depth of information on climate change impacts and adaptation disclosed by public companies. Initiatives such as the Carbon Disclosure Project (CDP), Investor Network on Climate Risk (INCR), Institutional Investors Group on Climate Change (IIGCC) and Australia/New Zealand Investor Group on Climate Change constitute investor forums promoting improved climate change disclosure. For example, the CDP investor questionnaire and the INCR Global Framework for Climate Risk Disclosure are increasingly used as benchmark instruments for evaluating corporate disclosure.

WHEREAS: Potash Corporation relies extensively on the availability of water for the production of potash, phosphate and nitrogen. There are physical, reputational and regulatory risk arising from such reliance, particularly as climate change is altering hydrologic cycles causing increased flooding in some areas and droughts in others... ..

BE IT RESOLVED THAT: The Board of Directors provide a report to shareholders by September 2010, prepared at reasonable cost and omitting proprietary information, describing how Potash Corporation is assessing the physical, regulatory and reputational risks associated with water as it relates to the company's operations and investments."

Resolution to Potash Corporation of Saskatchewan Inc., filed by Northwest and Ethical Investments L.P and withdrawn after Potash Corp. agreed to respond to the CDP Water questionnaire.

"WHEREAS: ... Climate change may present a number of important risks and opportunities for our company and these communities, as it impacts temperature, rainfall patterns, and disease vectors in the world's coffee growing regions... Shareholders request that within six months of the 2011 annual meeting, the Board of Directors provide a report to shareholders (at reasonable cost and excluding confidential and proprietary information) describing how the company will manage the social and environmental risks and opportunities connected to the company's coffee business and supply chain. We recommend the Board include in the report a concise discussion of how it will address temperature changes, changes in rainfall patterns, and the company's responsibility for its impact on the coffee farming families in its supply chain."

Resolution to J.M. Smucker Company, filed by Trillium Asset Management on 8th August, 2011.

Source: Shareholder Association for Research and Education

The business imperative for climate risk management

"In general insurance Aviva currently incurs several hundred million pounds worth of claims per annum from weather based events across our European and Canadian businesses." (Aviva, 2006)

"Climate change, climate policy and adaptation processes create risks as well as opportunities for Bayer."

(Bayer, 2006)

"Only last year in 2005 the integrity of our operations was severely challenged by the two hurricanes Katrina and Rita that struck some of our assets." (BP, 2006)

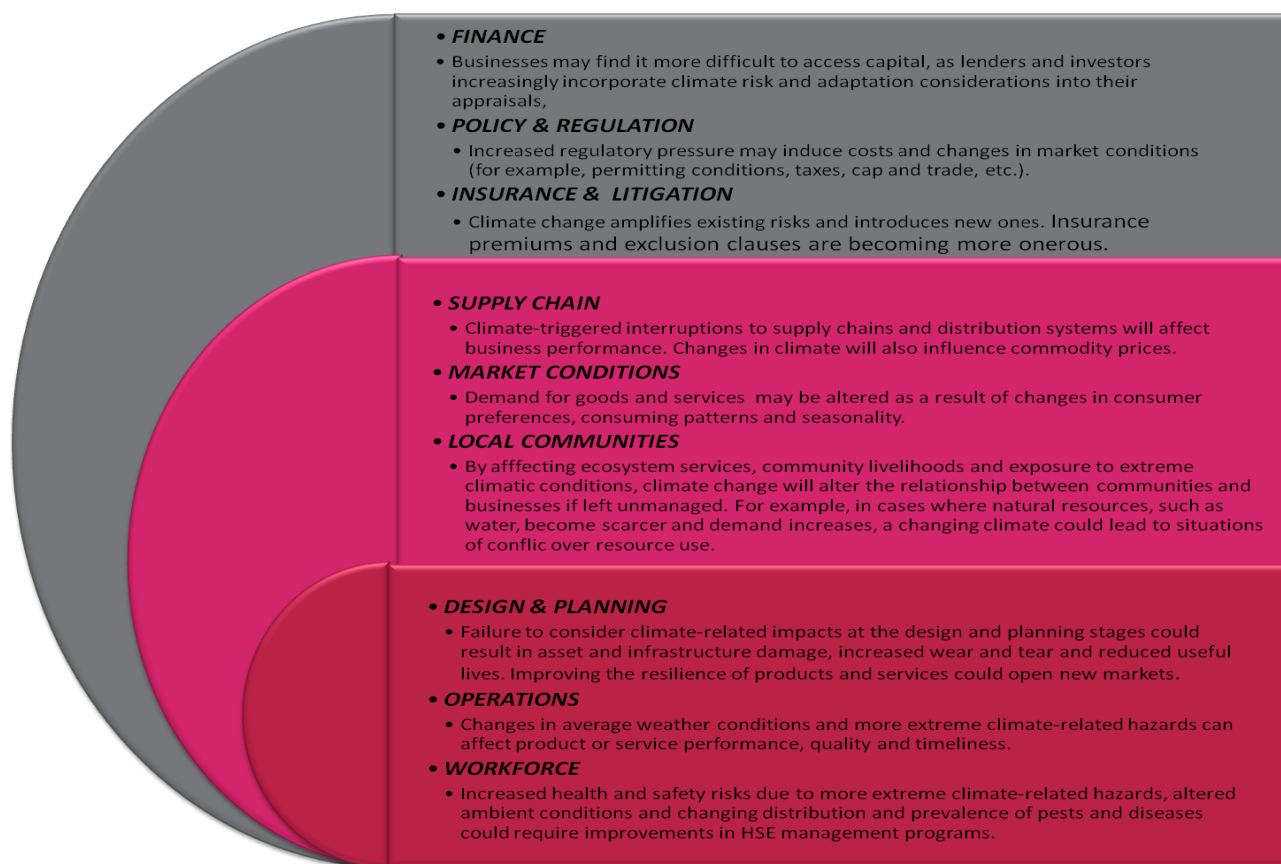
Every individual is exposed to the effects of extreme climatic events and changes."(BMW, 2006)

"Henderson Global Investors has begun to be affected by the physical impacts of climate change, notably through investments in the insurance sector and in companies damaged by increased extreme weather events (such as oil and gas facilities in the gulf of Mexico). As a result, we are incorporating the issue of adaptation into the questions we pose to sell-side investment analysts." (Henderson Group, 2006)

Source: Firth and Colley (2006)

There is a growing realisation that climate change will have significant implications for businesses and through the affect on bottom lines, return on investment and availability of credit. Although many businesses are starting to recognise the need to respond to climate change, few understand the risks and opportunities they face. Fewer yet have begun to develop plans to build resilience.

Figure 1. Examples of climate risks to companies. Adapted from Acclimatise and Synergy, 2008.



A recent survey by the Economist Intelligence Unit has found that around 90% of firms have suffered climate-related impacts over the past three years, yet only 30% have reported actively planning to manage these impacts (UKTI and EIU, 2011). All economic sectors will be affected by a changing climate, albeit in different ways (see Figure 1 above). Figure 2 shows how sensitive different sectors are to a wide set of climate change impacts (ranging from high sensitivity in dark red to low sensitivity in yellow).

By understanding the business consequences of climate change and the adaptation measures available, a business can identify the opportunities, manage risk and potentially gain a competitive advantage.

Figure 2. Matrix illustrating how sensitive different sectors are to a number of climate change impacts: dark grey for 'high sensitivity', medium grey for 'moderate sensitive' and light grey for 'low sensitivity'. Source: Adapted from International Finance Corporation 2010.

	Commercial banking	Finance and funds	Crop production and processing	Forestry and forest products	Water supply and infrastructure	Wastewater treatment and services	Electric power	Transport	Oil and gas	Mining
Water availability										
Water quality, pollution control and discharges										
Energy reliability and security										
Asset design, performance and integrity										
Raw materials, transport, supply chains and logistics										
Site and ground conditions										
Human health and safety										
Communities										
Market										
Air emissions and solid waste management										
Ecosystem services										

'Reasonable foreseeability' of future climate change: legal consequences

"Climate change is close to attaining 'legal significance' in courts." (International Finance Corporation, 2010)

The legal community is starting to acknowledge that sufficient information is available on climate change for it to be taken into account in both strategic and operational decision-making. Failure to consider the reasonably foreseeable impacts of climate change within corporate decision making processes may result in future legal challenges.

In future disputes, the reasonable foreseeability of physical climate change may be assessed by courts on the basis of 'knowledge points', after which it is reasonable to consider that the impacts of a changing climate should have been known and considered in decision-making.

These knowledge points already exist and encompass the following types of information:

- Evidence of the business consequences of a changing climate: for example, public statements by industry leaders recognising that climate change holds business risks and needs to be managed.
- Legislative, regulatory or policy provisions that integrate climate risk and adaptation considerations, such as the 2011 Ontario Growth Plan for Northern Ontario.
- Publications by international organisations such as the United Nations or the World Bank.
- Guidance from trade and sector organisations on the impacts of climate change.
- Growth in 'responsible investor' organisations and standards active on climate risk and adaptation.
- Guidance from professional institutions to their members on climate change. Membership in any professional institution usually imposes a responsibility to maintain professional knowledge and a duty of care to employers and clients.

Table 1 lists several 'knowledge points'. The effect is that all business decisions that do not consider climate risk and adaptation may have an accrued litigation and regulatory liability which increases over time through continuing failure to build climate change into decision-making.

Table 1. Examples of recent climate risk and adaptation 'knowledge points'

	Worldwide	Canada	US
2011	Economist Intelligence Unit and UK Trade & Investment: <i>Adapting to an Uncertain Climate. A World of Commercial Opportunities.</i> UN Global Compact, UNEP, Oxfam and World Resources Institute: <i>Adapting for a Green Economy. Companies, Communities and Climate.</i> International Organisation for Migration (IOM): <i>Disaster Risk Reduction and Climate Change Adaptation in IOM's Response to Environmental Migration</i> MERCER: <i>Climate Change Scenarios – Implications for Strategic Asset Allocation</i>	Government of Ontario: <i>Growth Plan for Northern Ontario 2011</i> Government of Ontario: <i>Climate Ready: Ontario's Adaptation Strategy and Action Plan</i> Canada. National Round Table on the Environment and the Economy. <i>Paying the Price: The Economic Impacts of Climate Change for Canada</i>	Interagency Climate Change Adaptation Agency Working Group: <i>Instructions for Implementing Climate Change Adaptation Planning in Accordance with Executive Order 13514</i> Ceres: <i>Disclosing Climate Risks & Opportunities in SEC Filings: A Guide for Corporate Executives, Attorneys & Directors.</i> Ceres: <i>Climate risk disclosure by insurers. Evaluating insurer responses to the NAIC climate disclosure survey.</i>

	Worldwide	Canada	US
2010	World Bank: <i>World Development Report 2010. Development and Climate Change</i> International Financial Corporation: <i>Climate Risk and Financial Institutions. Risks and Opportunities</i> International Financial Corporation: <i>Climate Risk and Business. Practical Methods for Assessing Risk</i> Organisation for Economic Co-operation and Development: <i>Integrating Climate Change Adaptation in Environmental Impact Assessments. Opportunities and Challenges</i>	Canadian Securities Administrators: <i>Staff Notice 51-333. Environmental Reporting Guidance</i> National Roundtable on the Environment and the Economy: <i>Degrees of Change. Climate Warming and the Stakes for Canada</i> Government of British Columbia: <i>Preparing for Climate Change. British Columbia's Adaptation Strategy.</i>	Securities Exchange Commission: <i>Guidance Regarding Disclosure Related to Climate Change</i> National Association of Insurance Commissioners: <i>Insurer Climate Risk Disclosure Survey</i> New York City Panel on Climate Change: <i>Climate Change Adaptation in New York City. Building a Risk Management Response.</i>
2009	United Nations: <i>Third World Water Development Report. Water in a Changing World</i> Acclimatise: <i>Building Business Resilience to Inevitable Climate Change. Carbon Disclosure Project Reports for Global Electric Utilities, Oil and Gas and Mining</i>	Ontario Expert Panel on Climate Change Adaptation: <i>Adapting to Climate Change in Ontario</i>	Executive Order 13514 US Global Change Research Program: <i>Global Climate Change Impacts in the USA</i>
2008		Creation of the federal 'Regional Adaptation Collaboratives Program' (known as RACs) City of Toronto: <i>Ahead of the Storm... Preparing Toronto for Climate Change</i> Atlantic Environment Ministers Meeting: <i>Climate Change Adaptation Strategy for Atlantic Canada</i>	Transportation Research Board: <i>Potential Impacts of Climate Change on US Transportation</i>
2007	IPCC: <i>Fourth Assessment Report</i>	Natural Resources Canada: <i>From Impacts to Adaptation: Canada in a Changing Climate</i>	
2006	Nicholas Stern: <i>Stern Review</i> Institutional Investors Group on Climate Change: <i>First Investor Statement on Climate Change</i> Carbon Disclosure Project: <i>CDP4 Greenhouse Gas Emissions and Climate Change Questionnaire</i> Acclimatise: <i>The Adaptation Tipping Point</i>		

	Worldwide	Canada	US
2003		Nova Scotia government: <i>Practitioner's Guide to Incorporate Climate Change into the Environmental Impact Assessment Process</i>	
2001	IPCC: <i>Third Assessment Report</i>	Creation of the federal 'Canadian Climate Impacts and Adaptation Research Network' (known as C-CIARN) Creation of the 'Consortium on Regional Climatology and Adaptation to Climate Change' (known as Ouranos)	
2000			US Global Change Research Program: <i>First US National Assessment of the Potential Consequences of Climate Variability and Change</i>
1998		Creation of Natural Resources Canada Climate Change Impacts & Adaptation Division	
1995	IPCC: <i>Second Assessment Report</i>		
1994		Creation of the Canadian Institute for Climate Studies (now Pacific Climate Impacts Consortium)	
1990	Intergovernmental Panel on Climate Change (IPCC): <i>First Assessment Report</i>		

Guidance on climate risk and adaptation disclosure

Disclosure about climate risk and adaptation is increasingly required of public companies. Recent guidance documents from the US Securities Exchange Commission (SEC) and the Canadian Securities Administrators (CSA) provide detail on how physical climate change can be relevant to a company's disclosure duty to shareholders about material risks. Understanding what these guidance documents mean in the context of climate risk and adaptation disclosure is essential for managing risk effectively.

Securities and Exchange Commission Guidance Regarding Disclosure Related to Climate Change

"There may be significant physical effects of climate change that have the potential to have a material effect on a registrant's business and operations. These effects can impact a registrant's personnel, physical assets, supply chains and distribution chains. They can include the impact of changes in weather patterns such as increases in storm intensity, sea-level rise, melting of permafrost and temperature extremes on facilities and operations. Changes in the availability or quality of water or other natural resources on which the registrant depends, or damage to facilities or decreased efficiency of equipment can have material effects on companies. Physical changes associated with climate change can decrease consumer demand for products or services [...] For some registrants, financial risks associated with climate change may arise from physical risks to entities other than the registrant itself [...] For example, [...] banks whose borrowers are located in at-risk areas. Companies also may be dependent on suppliers that are impacted by climate change." (US Securities Exchange Commission, 2010)

"In relation to company disclosure, [...] where climate change-related risks impinge on the ability of the company to deliver on its business strategy and/or create opportunities, this information should be provided to investors. Specifically, [...] companies should explain how climate change-related risks and opportunities are identified and assessed, describe the actions that are taken to address these (i.e. to minimize downside risks and maximize upside opportunities) and discuss the financial implications (e.g. costs incurred, residual risks) of the actions taken." (Universities Superannuation Scheme, 2009)

The SEC clarified *how* and *what* companies should disclose with regards to climate risks and opportunities.

Four types of issues are covered: physical impacts of climate change; impact of regulation and legislation; impact of international accords and indirect consequences of regulation or business trends. In relation to physical climate change, the SEC provides examples of possible material impacts, as shown in the quote in the margin.

The SEC makes it clear that climate risk and adaptation considerations need to be part of disclosures from US and foreign private issuers under Regulation S-K if they pass the materiality test. US courts have articulated test as follows¹: if there is substantial likelihood that a 'reasonable investor' would consider the piece of information important in deciding how to vote or make an investment decision. Similarly, a piece of information is material if it significantly alters the 'total mix' of information made available.

This means that a company could be required to disclose climate risk and adaptation information because a "reasonable investor" perceives a material risk, even if the company considers it to be immaterial. Investors' perception of materiality may derive from not only scientific reports but also statements by competitors.

Determining whether information on climate risk and adaptation is material requires a delicate assessment of the inference a reasonable investor would draw from such information and the significance of those

¹ It is indicated that climate change could come under items 101 (description of business), 103 (legal proceedings), 503c (risk factors) or 303 (management discussion and analysis).

inferences to his investment decisions. Companies need to be aware of the positions their investors are taking and to engage with them to understand issues of materiality.

The American Society for Testing and Materials (ASTM) in March 2010 published a guiding framework ('ASTM Guide') for climate change disclosure accompanying financial statements. The ASTM Guide (ASTM, 2010) suggests that reporting entities should disclose information on the financial impacts attributed to climate change if the reporting entity believes them to be material in the aggregate.

According to CERES, since publication of the SEC Guidance little progress has been made on climate change disclosure: many companies fail to report the risks adequately or do not report at all, so good practice examples continue to be rare (CERES, 2011c).

Canadian Securities Administrators Staff Notice 51-333: Environmental Reporting Guidance

In October 2010, the CSA published guidance on environmental reporting. While not specific to climate change, the CSA guidance emphasizes a number of issues relevant to physical climate change, namely:

- Operations disruption affecting supply and distribution chains, personnel and physical assets.
- Unplanned costs.
- Changes in capital expenditure decisions and the viability of projects.
- Evolution of consumer preferences.
- Altered access to and cost of capital.
- Changes in the affordability and availability of insurance.
- Emergence of new business opportunities.

The CSA requires that both the Management Discussion and Analysis (MD&A) and the Annual Information Form (AIF) should provide insight into what the issuer believes are the risks relating to the issuer and its business so that investors can assess the effect of these risks on the issuer's operations and/or financial performance. This applies to risks and opportunities from physical climate change, as illustrated in the example provided by the CSA (see margin).

Similar to the 2010 SEC guidance, the CSA Staff Notice does not amend existing securities law but clarifies what climate risk and adaptation information may need to be disclosed.

"The company's supply chain is based on agricultural commodities produced in Countries X, Y and Z. In particular, product X is a key component of the company's business. Sales of product X represent x% of the company's total revenues in its most recently completed financial year. Forty-five percent of the company's supply of product X is grown in Country X.

Country X is highly susceptible to hurricanes and other extreme weather events. In x of the last x years, Country X has experienced hurricanes that have resulted in significant damages to its crops of product X.

Extreme weather events, such as hurricanes, can impact the overall availability and quality of product X. This in turn may impact: the company's ability to buy sufficient quantities of product X, or the price the company pays for product X.

Any interruptions to the company's supply of product X or changes in the price that the company pays for product X could lower the company's revenues, increase its operating costs and impact its overall financial results. For example, the company currently estimates that a 1% increase in the price of product X will lead to an increase in the company's costs by \$x. During 20xx, the company's costs associated with product X increased by x% in the x months following Hurricane X in Country X. This led to a corresponding decrease in the company's revenues, as it was not able to fully recover the increase in its costs through higher sales revenues." (CSA, 2010).

Prudent steps for public companies in Canada and the USA on climate risk and adaptation disclosure

Public companies should develop an integrated approach to climate risk and adaptation disclosure. The following checklist covers the main business risks and opportunities that prudent companies will explore in relation to climate change.

10 questions to ask about climate risk and adaptation disclosure[©]

Understand your risks and opportunities

1. Have you developed a process for assessing climate change risks, opportunities and adaptation measures? Have you commissioned any reports containing detailed projections of costs and other quantitative information regarding the implications of climate risk and adaptation for your company?
 - It is important to understand how physical climate change will directly and indirectly affect your company. As part of any climate risk assessment, developing an understanding of market needs and opportunities to offer climate-resilient goods and services is essential to gain an 'early mover' advantage. Commissioning quantitative or semi-quantitative studies on climate risks and opportunities can help to build a business case for action on adaptation.
 - Determine whether quantitative or semi-quantitative information on the implications of physical climate change for your company passes the materiality test and needs to be included in your regulated disclosures.
2. Do you know if your key stakeholders have taken positions with respect to climate risk and adaptation²?
 - Understanding your stakeholder expectations in relation to climate risk and adaptation will be important in determined sectors to manage social licence to operate, reputation and market share. Defining a credible adaptation plan to build resilience is critical to respond to stakeholder pressures.
3. Have you engaged with partners to understand risks, opportunities and adaptation strategies?
 - Working in partnership with industry members, governments, regulators, investors, communities and stakeholders (insurers, lenders and suppliers) on climate change adaptation can bring added value. It helps create consensus and identify the best solutions, as well as manage reputation.
4. Have you built a portfolio of actions to deliver climate resilience?
 - Defining an adaptation plan is critical to respond to the risks and opportunities identified. There may be opportunities to leverage some existing initiatives. For example, some initiatives related to GHG emissions (such as energy efficiency) could be vehicles for building resilience
 - Taking account of local community needs or environmental performance when identifying adaptation actions can help deliver on key business objectives, while creating co-benefits for communities and the environment. For example, operational adaptation measures to protect coastal facilities could have ancillary benefits for vulnerable communities (such as reforestation).

² Stakeholders may include institutional investors, individual shareholders, labour organizations and industry groups.

Set up a robust governance system

5. Do you have an executive leadership responsibility on climate risk and adaptation?

- Climate risk and adaptation disclosure could require a body of data, information and input from different parts of the business not historically involved in disclosure exercises. Ensuring that executive leadership exists, responsibilities are assigned at the senior management-level, and control mechanisms are in place are essential elements of a successful disclosure framework.
- Governance functions, such as officers and audit committees, have critical roles to play in ensuring that climate risk and adaptation disclosures are accurate and complete.

6. Have you integrated climate risk and adaptation into your core strategic, business planning and management processes (such as design, operations, supply chains, risk management and market strategies)?

- As with any new issue that is mainstreamed within an organisation, it is important that climate risk and adaptation is incorporated within existing strategies and management frameworks. If these issues are starting to influence the company's business strategies and management decisions, they may be considered to be material in relation to disclosure requirements.

7. Have you aligned your business goals and performance indicators to reflect climate-resilient priorities, risks and opportunities?

- Making sure that business goals and key performance indicators reflect the key aspects of a climate resilience strategy is an important element of a robust governance system on climate risk and adaptation.

Be diligent in your disclosure

8. Have you considered the approach to climate risk and adaptation disclosure being taken by other companies in your industry? Do you know the positions of your key stakeholders with regards to climate risk and adaptation disclosure?

- Benchmarking your disclosure approach against your competitors and key stakeholders will help you improve your disclosure performance and identify opportunities to gain a competitive advantage.

9. Are your informal or 'soft' disclosures³ regarding climate risk and adaptation consistent with your regulatory disclosures?

- Consider the venues, including reports, media advertisements, speeches or other statements, where the company discloses information on climate impacts and adaptation. If the information reported is inconsistent with what is included in regulatory disclosures, liabilities could be incurred.

10. Have you made sure that everyone in the company is aware of the information that has been released on climate risk and adaptation?

- Work with those in your company who regularly interact with investors, securities analysts, NGOs, the media and the public to ensure that they are aware of the company's climate risk and adaptation disclosures and that their public statements are aligned with these disclosures. This may include senior executives, investor relations and communications staff.

³ Soft disclosures include media advertisements, speeches or other statements by senior executives, governmental lobbying efforts on behalf of your company or information provided on your company's internet website.

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