

GUIDANCE ON CLIMATE-RELATED DISCLOSURES

Northern Trust Asset Management's primary objective as an asset manager is to create long-term value for our clients. As a major global investor, Northern Trust Asset Management has interest in how shareholder value is affected by a company's impact on the natural and social environment, and recognizes that a well-developed environmental and social management system can enhance shareholder value in the long term. For this reason, we generally encourage reporting that is not unduly burdensome, but which provides meaningful information enabling shareholders to evaluate the impact of the company's environmental, social and governance (ESG) policies and practices on its financial performance. This document contains general guidance to investee companies regarding Northern Trust Asset Management's expectations for climate-related company disclosures.

Without the right information about climate policies, the market may incorrectly price assets, which could lead to a misallocation of capital. This would present a risk of volatile value adjustments for Northern Trust Asset Management's portfolios, which contain US\$549 billion of equity assets under management as of September 30, 2018.

While the pace and specific mode of such adjustments currently remain largely unknown, significant disruptions from rapid change in policy, technology and physical risks could prompt a reassessment of the value of a large range of assets as costs and opportunities become more apparent. The potential abruptness of such re-pricing could influence macro-economic stability and have broad consequences across a range of industries or geographies.

It is difficult for investors such as Northern Trust Asset Management to know which companies are most at risk from climate change and those best prepared to mitigate financial and reputational risks as they arise. Such assessments rely on clear, concise and consistent data from investee companies as well as research by third parties.

At the 21st Conference of Parties (COP21) in Paris in December 2015, 195 countries adopted a legally binding agreement to implement more stringent carbon regulation in order to reduce carbon emissions. The goal of the regulation is to avoid a global average temperature rise of more than 2°C above pre-industrial levels and accelerate the transition to a lower-carbon economy. For investors, this raises questions, including:

- What is the potential that new or evolving local, regional, national and supra-national policy changes will impact the business? In what ways?
- What potential for disruptive technological or market changes exist?
- What is the potential for physical impacts and macroeconomic shifts that may result in sudden losses in asset values and financial dislocations?
- What activities will promote resiliency of the business strategy and capital spending to promote a smooth transition to a lower-carbon economy?

GOVERNANCE FRAMEWORKS

Northern Trust Asset Management expects companies’ governance framework to clearly articulate the board of directors’ and management team’s oversight of climate change risk. We expect companies to provide disclosures in the company’s publicly filed proxy statement that describe the issuer’s governance around climate-related risks and opportunities. We strongly encourage companies to provide, among other useful information, the following disclosures in their public filings:

BOARD OVERSIGHT	MANAGEMENT OVERSIGHT
• The processes and frequency through which the board is informed about climate-related issues • The way in which the board considers climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, budgets and business plans • The board’s consideration of climate-related issues through the organization’s and executives’ performance objectives, standards for implementation and performance and major capital expenditures, acquisitions and divestitures • How the board monitors and oversees progress against goals and targets for addressing climate-related issues. • How climate-related skills and expertise are factored into the composition of the board	• Overall responsibility for climate related risk oversight and management within the organization • The process through which management reports to the board on climate-related issues, including whether the company has assigned climate-related responsibilities to management-level positions or committees • Processes by which management is informed about climate-related issues • Climate scenarios that are factored into investment planning and risk management

RECOMMENDATIONS OF THE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURE (TCFD)

Northern Trust Asset Management examines disclosures in the company's public reporting that address the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning. We strongly encourage companies to provide, among other useful information, public disclosures that align with guidance set forth in the TCFD recommendations, which may include, though not be limited to, descriptions of the following:

- The governance structure and processes used to identify and assess climate-related risks and opportunities;
- The short, medium and long-term climate-related risks and opportunities, and how the processes for identifying, assessing, and managing them are integrated into the organization's overall risk management;
- The impact of climate-related risks and opportunities on the businesses, strategy and financial planning, including a description of the resilience of the organization's strategy to various 2° scenarios with underlying assumptions; and
- Metrics and targets for managing climate-related risks.

Northern Trust Asset Management supports companies that use the Sustainability Accounting Standards Board's (SASB) reporting standards for reporting industry-specific metrics. Standards help ensure that companies disclose material, comparable and consistent information and help investors compare performance across companies and time periods. Standards enable companies to improve the narrative, information and data made available to investors on significant ESG issues.

Companies that do not use the SASB framework are encouraged to work within their industry associations to select comparable reporting standards that adhere to the TCFD guidance and that are widely adopted by members of that industry.

Northern Trust Asset Management does not have a specific preference as to whether a company's disclosures are reported in its annual report or a separate stand-alone sustainability report. Regardless of where the information is disclosed, we believe climate related disclosures should be prepared with strong internal controls and subject to similar board-level oversight as financial information.

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REDUCTION OF GREENHOUSE GAS EMISSIONS

Northern Trust Asset Management recognizes that climate-related physical and transition risks will most likely manifest themselves in the form of constraints on greenhouse gas (GHG) emissions; effects on energy production and usage; and efforts on water availability, usage and quality.

Northern Trust Asset Management supports the Greenhouse Gas Protocol's (GHGP) standardized framework to measure and manage GHG emissions. We understand that, depending on the industry, the focus should be differentially placed on either Scope 1, Scope 2 or Scope 3 emissions (upstream or downstream), which reflects different framework of companies' involvement in the energy value chain. Without consistency in using, disclosing and explaining these specific metrics, an adequate risk analysis would not be possible. We encourage companies to follow the SASB reporting standards on GHG emissions. We also encourage companies to report using the CDP (formerly the Carbon Disclosure Project) questionnaire.

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