



Climate Data in the Investment Process: Challenges, Resources, and Considerations

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Climate change is already dramatically impacting the lives of millions through more intense storms, flooding, droughts, wildfires, and other phenomena.¹ Unchecked, it will cause significant losses to human life, inestimable damage to infrastructure and property, and widespread destruction of land use and ecosystems. Preexisting social inequalities will be aggravated as the direct and indirect impacts of climate change fall inequitably among different regions and demographics (see, e.g., Taconet, Méjean, and Guivarch 2020; Islam and Winkel 2017; Semet 2023).

Estimating the financial costs of future climate change impacts and mitigation efforts is extraordinarily complex, but the cost estimates are generally staggering. An analysis by Deloitte (2022) projects that an increase in global warming to 3 degrees Celsius—as implied by the country policies currently in place—could lead to global economic losses of USD178 trillion over the next 50 years. In contrast, the Deloitte analysis estimates that successfully transitioning to a low-carbon economy could yield USD43 trillion in economic gains over the next five decades. Put simply, the economic risks and opportunities posed by climate change are enormous.

To prevent the worst effects of climate change, climate experts say that global warming must be limited to under 1.5 degrees Celsius and that the world must transition to a state of “net-zero” greenhouse gas (GHG) emissions by 2050 (IPCC 2018). That is, GHG emissions must be reduced as much as possible, and any remaining GHG emissions must be absorbed or offset. According to a McKinsey Global Institute (2022) report, “The Net-Zero Transition: What It Would Cost, What It Would Bring,” capital spending needs to transition physical assets for energy and land-use systems (e.g., agriculture, buildings, mobility, and industry) may be as high as USD275 trillion, for an annual average

¹See www.un.org/en/climatechange/what-is-climate-change.

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of up to USD9.2 trillion per year from 2021 to 2050—up to an additional USD3.5 trillion per year over 2021 costs.

To address the risks related to climate change, governments around the world are adopting policies and regulations to fund the transition to net-zero economies. Companies are evaluating physical and transition liabilities and opportunities. Banks and insurers are altering their businesses to better address climate-change-related liability risk in their lending and underwriting decisions.² Asset owners are seeking to understand how climate change may affect the value of their assets. Asset managers, too, are increasingly analyzing the climate risks and opportunities of their investments.

Key to addressing the investment risks and opportunities associated with climate change is having accessible, reliable climate-related data to measure and analyze them. This report provides an overview of the uses of climate-related data in the investment process, the problems and challenges associated with the availability and reliability of the data, developments in regulations and standards aimed at improving data quality, and how practitioners can navigate in a world of imperfect data.

Climate-Related Data in the Investment Process

Not surprisingly, there is significant investor interest in products that consider climate-change-related factors. Measuring the amount of assets under management that explicitly incorporate climate considerations into the investment process is difficult because climate considerations are often included in analysis and decision making alongside other environmental, social, and governance (ESG) factors. The Global Sustainable Investment Alliance (2022) estimated that at the start of 2022, USD30.3 trillion in assets was being managed according to one or more sustainable investing strategies. The trillions of dollars in global assets under management incorporating climate considerations in the investment process underscore the importance of having accessible, reliable climate-related disclosures, as well as understanding the limitations and risks of using the data.

²For example, over the past few years, several insurance companies have withdrawn from providing insurance in the state of California, citing increased risks of wildfires.

Climate-related information is collected, analyzed, and used not only by asset managers or lenders but also by those who provide services to them, such as the following:

- Credit rating agencies, which incorporate climate risk exposure into credit ratings
- Index providers, which provide climate-themed indexes and often calculate climate-related metrics for conventional indexes
- Valuation service providers, which may incorporate climate considerations when valuing private assets
- ESG rating providers, which often incorporate climate-related data and opinions in their ESG ratings and scores
- Sell-side research providers, some of which are integrating climate-related information into their analyses
- Climate-related data and research providers, which produce a wide range of company and sector-specific climate-related information, as well as a comprehensive range of market research, market intelligence, and thought leadership on climate-related topics

In 2022, PricewaterhouseCoopers Advisory Services LLC was retained by the Climate Finance Fund to review how these various service providers were using climate-related information to inform their products, either directly or indirectly. That review found that these service providers incorporate climate-related information to varying degrees into traditional analyses, decisions, and products, as well as into new products and services (PricewaterhouseCoopers 2022). The study also found that the data used as inputs for climate-related analyses and the methodologies used by similarly situated service providers varied significantly. This variability is often coupled with limited transparency, consistency, reliability, and comparability.

A 2022 CFA Institute member survey provides some insight into demand for climate analysis in the investment process.³ The survey asked more than 1,000 members whether clients were asking for more from them on climate change analysis and investment products. Nearly three-quarters (72%) answered “yes.” This figure represents a substantial increase from a 2020 CFA Institute survey of 3,000 members asking the same question, when just 45% of respondents answered “yes” (Orsagh 2020). More than half of the 2022 survey respondents reported that they or their organization consider climate risk in portfolio risk analysis. More than 40% of members surveyed in 2022 indicated that their clients are “asking for more information and analysis,” and 21% indicated that their clients “are asking that current products take climate change into greater consideration.”

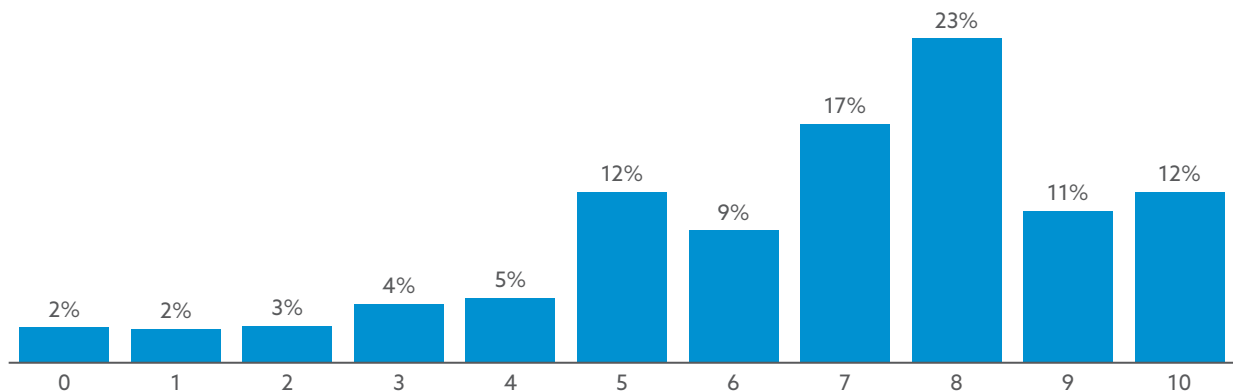
³Note that this is an unpublished survey.

A fundamental challenge identified in the 2022 CFA Institute member survey, however, is obtaining the necessary data for climate change analysis. Respondents to the survey indicated that they lack reliable information with which to assess companies' climate-related risks and opportunities.

Exhibit 1 shows the 2022 survey respondents' views of the availability and reliability of corporate disclosures related to climate risks and opportunities. Respondents were asked on a sliding scale from 0 ("Does not significantly prevent") to 10 ("Significantly prevents") the degree to which a lack of available, reliable information for assessing companies' exposure to climate risks and opportunities prevents the industry from investing for net zero and mitigating the financial consequences of climate change. Nearly half of survey respondents (46%) answered this question with an 8, 9, or 10, indicating a significant obstacle, and just 11% assigned scores ranging from 0 to 3, indicating few concerns about data availability and reliability.

Climate-related data are often used in the investment process not only to assess climate change transition risks and opportunities but also to value assets; set shareholder engagement goals, such as pressing companies to adopt a transition plan or increase transparency around their disclosures; and meet investor preferences for low-carbon or more sustainable investments. An array of climate-related data and metrics exist, and determining which climate-related information has value in an analysis can be difficult. The decision to use certain data and metrics depends on several factors, such as purpose (e.g., risk analysis or sustainability preference), asset class (e.g., public versus private, equities versus bonds), and strategy (e.g., thematic, socially responsible, net-zero investing).⁴ The Task Force on Climate-related Financial Disclosures (TCFD),

Exhibit 1. Survey Respondents' Confidence in Availability and Reliability of Corporate Climate-Related Disclosures



Notes: Survey respondents were asked, "To what extent does a lack of available, reliable information prevent the investment industry from assessing companies' risks and opportunities in investing for net zero?" Respondents answered on a sliding scale from 0 ("Does not significantly prevent") to 10 ("Significantly prevents").

⁴A discussion of the specific factors underlying such decisions is beyond the scope of this paper; however, readers may find more information on this topic in the curriculum for the CFA Institute Climate Risk, Valuation, and Investing Certificate.

a not-for-profit organization created to encourage companies to disclose financially material climate-related information, recommends all companies disclose the following climate-related data and information:⁵

- Annual greenhouse gas emissions
- Weighted average carbon intensity (WACI)
- An internal price on carbon
- A climate risk analysis

The TCFD (2021) provides guidance to help link climate-related information to potential financial risks and opportunities. For example, high GHG emissions may expose a company to increased costs from policy and legal risks, such as litigation and regulatory fines, compliance costs and insurance premiums, and asset impairment. High emissions may also increase input and product prices, leading to market risks in the form of reduced product demand. A company's climate risk analysis might highlight the need for an increase in research and development to fund technology solutions. In contrast, resource efficiency opportunities may translate into lower operating and production costs, and a shift toward alternative energy sources can provide insulation against future fossil fuel price increases.

Data Challenges

Market participants can obtain climate-related information from a number of sources. Obtaining comprehensive, reliable, and comparable climate-related company data can be challenging because many jurisdictions lack climate-related disclosure obligations. Corporate climate-related disclosures that are not mandated by a local regulator might be made under a foreign jurisdictional mandate or reported voluntarily. For instance, thousands of companies choose to disclose climate-related information to the CDP global disclosure platform.⁶

Sources of climate-related information include the following:

- Company disclosures, such as regulatory filings, corporate sustainability reports, and proxy reports
- Direct dialogue with companies
- Nongovernmental organizations, multilateral agencies, and government datasets and publications
- Industry and nonprofit organizations
- Third-party data providers

⁵For a complete list of TCFD recommendations, see www.fsb-tcfid.org/recommendations/.

⁶For more information, go to www.cdp.net/en.

In general, types of data, including climate-related data, typically can be accessed in three forms: raw, processed, and analyzed. *Raw data* are data disclosed by primary sources—in this case, companies themselves. Companies disclose data directly in their filings with regulators, in their corporate sustainability reports, and to industry organizations, nonprofits, and multilateral agencies. A high degree of inconsistency exists in what climate-related information, if any, companies disclose; how companies define, measure, and calculate climate data and metrics; and even the timing of the disclosures, which vary according to fiscal years among companies. In addition, the timing of climate-related disclosures may not sync with the issuance of a company's financial statements, leading to difficulties in interpreting carbon metrics based on financial disclosures.

Many companies struggle with obtaining the resources and expertise needed to collect, calculate, and report the information investors and regulators are looking for. According to an MSCI (2023) report, 50% of constituents in the MSCI ACWI Index report Scope 1 and/or Scope 2 emissions and just 37% report some form of Scope 3 emissions. Larger firms tend to have more resources with which to address disclosures. A Conference Board (2022) report found that "larger firms disclose greenhouse gas (GHG) emissions at 2.5 times the rate of smaller firms." Data integrity is also an issue given the various methods for measuring and reporting climate-related data. The Conference Board report (2022) also found that larger firms seek external assurance on their sustainability disclosures at 6 times the rate of smaller companies. An OECD (2022) report found that climate data disclosure tends to be correlated with cap size; large-cap companies are far more likely to disclose climate data than small or mid-size companies. Emerging market companies and privately held companies also tend to lag on GHG emission disclosures.

Processed climate-related data can fill disclosure gaps and provide investors with a more complete set of information to work with. *Processed data* are data that are estimated, interpolated, or modeled. For example, a data vendor might estimate Scope 1, Scope 2, and/or Scope 3 emissions for companies that do not disclose them. Many capital market participants find it difficult, time consuming, and costly to obtain, process, and aggregate data for the hundreds or thousands of companies that make up their investment or product universes, so they often choose to obtain climate-related data from third-party data vendors or industry organizations, which can include a mixture of raw and processed data.

Processed data solve some but not all climate-related data availability and comparability problems. Many data providers lack coverage of smaller companies and companies domiciled in emerging markets. In addition, using data providers does not automatically ensure reliable information. A great many assumptions and estimations underlie the calculations of various climate-related data and metrics, and methodologies are often not disclosed. Errors—even sizable ones—occur in all types of processed data. In cases where actual climate-related data are found to differ substantially from estimated data, such

an error could lead to higher portfolio climate risk exposure than was intended or cause a fund to violate its label criteria or climate-related characteristics.

Verifying third-party climate-related data by cross-checking with original source documents, against industry organization databases, or against other data providers can help identify errors and minimize their impact. When using estimated data, understanding and comparing provider methodologies is also helpful, though not all providers disclose their estimation methodologies. Some managers subscribe to a number of third-party data vendors to fill investment universe gaps in region, industry, asset class, or cap size; combining data sources or having a portfolio of data can help with verifying data and minimizing errors. Data subscriptions, however, can be expensive, and the cost of a portfolio of third-party data providers may be beyond the reach of asset managers with fewer resources.

Analyzed data are data that have been collected, processed, aggregated, and presented as a judgment or an opinion. Analyzed data containing climate-related information are available in the form of ESG company ratings. According to an OECD research report on climate data in ESG ratings, “The environmental ‘E’ pillar score of ESG rating has become an important component of ESG investing, as the ‘E’ pillar is being increasingly used as a proxy for asset selection aligned with a low carbon transition” (OECD 2022, p. 3).

Like the climate-related data they contain, however, ESG ratings are not directly comparable. They are calculated using myriad estimates and methodologies (International Organization of Securities Commissions 2021). ESG rating agencies may use hundreds of ESG datapoints and metrics in their company analyses to formulate ESG ratings. Research has shown that the differences in ESG ratings for individual companies among providers are substantial (Berg, Kölbel, and Rigobon 2022). Comparing ratings is made more difficult by the large number of ESG rating providers that exist; for example, a report commissioned by ESMA (2022) found 59 ESG rating providers in the EU as of November 2021.

The aforementioned OECD (2022) report explored the extent to which the “E” pillar of ESG ratings from four large ESG rating providers reflects climate-change-related analysis in such a way that market participants could judge a company’s climate risks or opportunities. The report found that high E pillar scores are not directly aligned with decarbonization, low GHG emissions, or low carbon intensity and do not serve as a useful measure for assessing a company’s management of its climate-related risks and opportunities. Rather, high E scores were likely being driven by company size, capacity for disclosures, and the existence of climate-related policies, commitments, and targets.

The widespread use of ESG ratings in many investment products and the issues of transparency and comparability have not been overlooked by regulators.

Several regulators have issued or are in the process of issuing regulations or voluntary codes of conduct for ESG rating agencies and data providers.⁷

GHG Emissions

Many types of climate-related information exist, but greenhouse gas emissions, in particular, are critical to assessing a company's transition risks and opportunities. GHG emissions also form the basis for carbon metrics, including emission intensity, carbon footprint, and warming degrees; transition pathways; scenario analysis; and other measures used in company analysis, valuation, and portfolio construction.

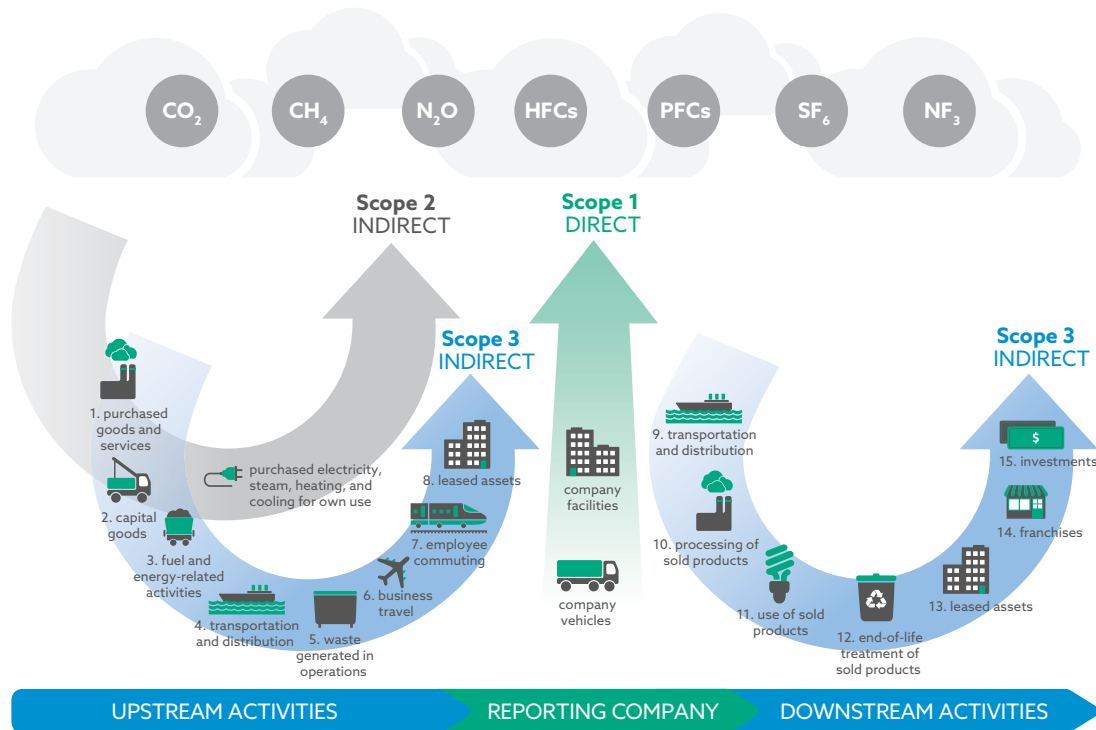
GHG emissions consist of three types: Scope 1 emissions, which are a company's direct emissions; Scope 2 emissions, which are indirect emissions generated from a company's purchased energy, such as electricity; and Scope 3 emissions, which are indirect emissions generated from a company's value chain. Scope 3 emissions consist of two categories—upstream and downstream activities—and 15 subcategories. Upstream emissions are generated from inputs to the production process, such as purchased goods, waste generation, and leased assets. Downstream emissions are generated from delivering and using the finished product or service provided, such as distribution, end-of-life disposal, and investments or loans. **Exhibit 2** illustrates the sources of Scope 1, Scope 2, and Scope 3 emissions according to the Greenhouse Gas Protocol, an organization dedicated to providing tools and standards for measuring and managing emissions. The Greenhouse Gas Protocol issues the world's most commonly used accounting and reporting standards for GHG emissions.

For certain industries, Scope 3 emissions are the largest source of emissions and the most problematic to deal with when incorporating into investment analysis. Because Scope 3 emissions are generated mostly outside of a company's control, calculating them is complex and requires many assumptions. Thus, Scope 3 emissions generally must be estimated (Greenhouse Gas Protocol 2011). As such, Scope 3 emissions are subject to estimation errors, and the quality of the data may be low. The "Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard" provides companies with flexibility and options in calculating their Scope 3 emissions, which leads to a wide range of interpretations in accounting and reporting of Scope 3 emissions. **Exhibit 3** shows a comparison of sectors with high Scope 3 emissions.

The financial services industry provides an example of the challenges associated with analyzing or measuring emission data when Scope 3 emissions account for a substantial portion of GHG emissions. As shown in Exhibit 3, nearly all of a financial institution's emissions are Scope 3 emissions. Financial institutions

⁷For example, in India, the securities regulator requires rating agencies to publish their methodologies. The European Council has approved a proposed regulation that applies stringent oversight of ESG rating providers and requires the disclosure of the composition of a provider's ESG ratings and the limits of the information and methodologies used to construct the ratings. The United Kingdom, Japan, and Singapore have issued ESG rating agency voluntary codes of conduct.

Exhibit 2. Overview of GHG Protocol Scopes and Emissions across the Value Chain

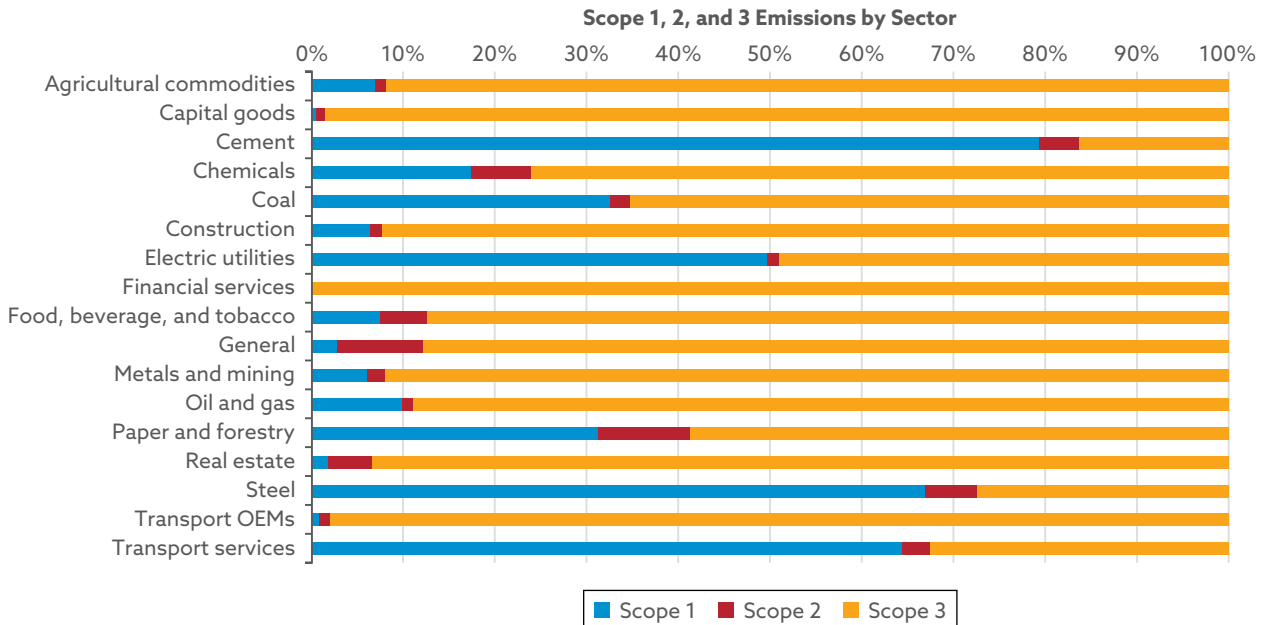


Source: Greenhouse Gas Protocol (2013, p. 6).

have few direct emissions and limited purchased emissions, yet they may have sizable “financed emissions”—loans or investments in high-carbon-emitting companies or companies with substantial carbon assets. Not all financial institutions disclose the companies to which they lend, so a fund that invests in financial firms may unknowingly be exposed to high levels of indirect GHG emissions, risks, or carbon assets if Scope 3 emissions are considered. For instance, analysts may be unable to reasonably estimate potential risks stemming from carbon assets used as loan collateral.

Funds that carry certain sustainability labels, exclude fossil fuels, or commit to a portfolio warming degree limit have a higher degree of sensitivity to estimation errors when including Scope 3 emissions. As an example, funds that exclude fossil fuels may have inadvertent fossil fuel exposure through financed Scope 3 emissions. An additional challenge with measuring Scope 3 emissions at the fund level is that one company’s Scope 1 emissions may be another company’s Scope 3 emissions. Thus, the inclusion of Scope 3 emissions at the fund level requires careful analysis and interpretation due to the methodological pitfall of double counting.

Exhibit 3. A Comparison of Sectors with High Scope 3 Emissions



Note: OEMs stand for original equipment manufacturers.

Source: CDP (2023).

According to the Greenhouse Gas Protocol, its value chain emission standard is designed to enable comparability of a company's emissions over time; thus, Scope 3 emissions are not intended for use in comparing companies or for portfolio construction. The TCFD recommends that such metrics as WACI and carbon footprint be calculated using Scope 1 and Scope 2 emissions to increase the reliability of the metric. This practice results in a more accurate, though smaller, carbon footprint and WACI.

2023 Milestones in Regulations and Standards

The year 2023 represented a milestone for efforts to improve climate-related data disclosures. Various regulations, standards, and industry initiatives were enacted, issued, or proposed to improve the availability, consistency, transparency, and quality of climate-related information. We discuss several notable ones here.

In June 2023, the International Sustainability Standards Board (ISSB), which was created by the International Financial Reporting Standards Foundation (IFRS), the oversight body of the International Accounting Standards Board, issued two inaugural standards with the intent to form a comprehensive global baseline for financially material corporate sustainability and climate-related disclosures. The standards—IFRS S1, *General Requirements for Disclosure of Sustainability-related Financial Information*, and IFRS S2, *Climate-related Disclosures*—are the first global financially material sustainability and climate-related data reporting standards. IFRS S2 incorporates the recommendations of the TCFD.

IFRS S2 requires an entity to disclose certain climate-related metrics, including its Scope 1, Scope 2, and, where material, Scope 3 GHG emissions, which must be measured according to the Greenhouse Gas Protocol or requirements set by a governing jurisdiction. Companies must also disclose specific information about climate-related physical and transition risks and opportunities that could reasonably be expected to affect the entity's cash flows or its access to finance or cost of capital.⁸ The standards do not require reporting entities to obtain assurance on the disclosed data; assurance requirements are at the discretion of individual jurisdictions. The International Organization of Securities Commissions (2023) endorsed the new standards, calling them a “major step toward consistent, comparable, and reliable sustainability information.” IFRS S1 and S2 are effective as of January 2024 and will be required by some jurisdictions, accepted in others, and not recognized in others, including the United States, which has proposed its own set of climate-related disclosures.

The European Union has also proposed its own set of sustainability-related standards. The European Financial Reporting Advisory Group has created, at the behest of the European Commission under the Corporate Sustainability Reporting Directive (CSRD), the European Sustainability Reporting Standards (ESRS). The ESRS require reporting on a double-materiality basis; that is, the ESRS encompass both financial materiality and impact materiality. The ESRS are different from IFRS S1 and S2, which apply a financial materiality and investor-focused perspective, and different from the US Securities and Exchange Commission (SEC) rules (discussed later), which also focus on financial materiality and investor perspectives. The ESRS focus on civil society objectives and the impact on all stakeholders, not just investors.

Climate-related disclosures under ESRS include disclosures related to greenhouse gas emissions, companies' assessments of their physical and transition climate-related risks and opportunities, and their progress toward their climate change mitigation and adaptation targets and metrics. Entities subject to the CSRD and ESRS must also sync their corporate sustainability reporting with their financial reporting. The first set of ESRS was issued in August 2023. Application of the regulation will take place in stages according to type of entity, beginning in January 2024 and extending through 2028.

The CSRD entered into force in January 2023.⁹ The CSRD applies to both listed and unlisted EU companies—nearly 50,000 in total, or about 75% of European companies (European Parliament 2022). The disclosure requirements will also apply to any company that generates a net turnover of EUR150 million in the EU and that has at least one subsidiary or branch in the EU, a broad reach that extends to thousands of non-European multinationals (European Council 2022). EU member states must transpose the CSRD into law by 16 June 2024. Non-European multinationals must begin disclosing in 2029 for fiscal year 2028.¹⁰

⁸See www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s2-climate-related-disclosures/.

⁹See https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en.

¹⁰Listen to *The Sustainability Story* podcast on the impact of the CSRD on non-EU-based multinationals: <https://podcasts.apple.com/us/podcast/brian-tomlinson-understanding-the-impact-of-eu/id1581786457?i=1000635397407>.

The ESRS address several issues associated with obtaining climate-related data. They require a consistent set of financially material climate-related data, they apply to mid-size and small listed companies in addition to large companies, they require companies to synchronize their corporate sustainability reporting with their financial reporting, and they require assurance on sustainability-related and climate-related data.

A number of additional regional efforts to standardize climate-related disclosures are underway or soon entering force, including new US-based regulations. In October 2023, the state of California—the world’s fifth largest economy—enacted an emission disclosure law designed to mandate transparency and accountability for corporate greenhouse gas emissions. Known as the Climate Corporate Data Accountability Act, Senate Bill 253 applies to any company, public or private, with revenues greater than USD1 billion doing business in the state of California. Such companies must disclose their Scope 1, Scope 2, and Scope 3 greenhouse gas emissions, report their emissions according to the standards set by the Greenhouse Gas Protocol, and, importantly, obtain assurance on reported data. Companies that fail to comply with the law may be fined up to USD500,000. The law is expected to affect more than 5,000 companies, and like the ESRS, its reach will extend beyond the state’s borders. The law is notable for its widespread applicability, the scope of its disclosures, and the potentially steep penalties. California also enacted Senate Bill 261, the Climate-Related Financial Risk Act, which requires the covered entities to create climate risk reports that contain disclosures of climate-related financial risks that are consistent with TCFD recommendations.

In March 2024, the SEC announced its long-awaited new rules to improve and standardize climate-related disclosures for US-based companies and companies doing business in the United States. Regulation S-K requires specific disclosures about a company’s material climate-related risks, management of such risks, financial impacts of such risks, certain information about material climate-related targets or goals, if any, and transition plans, if any, among other disclosures. For certain larger SEC registrants, Regulation S-X requires a company to disclose its material Scope 1 and Scope 2 emissions and provide limited assurance. Importantly, companies must provide Regulation S-K climate-related disclosures in their SEC filings. The compliance period for the rules is staggered over a five-year period beginning with fiscal year 2025.

The new rules intend to provide investors with financially material climate-related information for investment decision making. According to SEC chair Gary Gensler, “The rules will provide investors with consistent, comparable, and decision-useful information, and issuers with clear reporting requirements” (SEC 2024). The new rules differ markedly from the Climate-Related Disclosure Rule proposed in March 2022, which would have required, among other things, disclosure of Scope 1 and Scope 2 emissions in addition to Scope 3 emissions if deemed material.

Data Strategies: What Can Investors Do?

Although a number of long-awaited regulatory and standards solutions are either entering force or on the horizon, investors still have their work cut out for them. According to Sandra J. Peters, senior head, Financial Reporting Policy Group, CFA Institute, many organizations and government entities have worked together with the hope of developing “interoperable” standards, but the degree of interoperability remains unclear; for the time being, it appears unlikely that interoperability will result in a global disclosure baseline.¹¹ A detailed comparison of each of the regulations and standards discussed earlier is a substantial undertaking, but in broad strokes, each includes some type of provision for

- disclosures related to greenhouse gas emissions and
- disclosures related to governance, metrics, sensitivity analysis, and transition plans related to climate risks.

Each disclosure standard is sufficiently different to make consistency and comparability of the data a continuing challenge for investors. Comparability is further complicated by the differences in materiality, the audience for the information (i.e., investors or other stakeholders), the location of the information (i.e., annual reports filed with regulators, separate sustainability reports, and filings with other governmental agencies and bodies), the timeline for the adoption of the standards, and the degree to which the information will be verified by external parties, such as auditors. Peters believes this process is just the beginning of an information journey that, if financial reporting is a model, could take decades.

The evolution of financial data can provide somewhat of a blueprint for how investors can address the challenges of using climate-related data. Before the maturation of accounting standards, financial data were imperfect for many years and are still imperfect for companies in emerging markets, where accounting and financial reporting practices are evolving. As with financial data, climate-related data availability and quality have improved over recent years and will continue to improve. In the meantime, investors should apply the same data interpretation, checks, and management techniques that they apply when working with other sets of estimated or incomplete data—such as validating data by cross-checking with original source data, understanding data provider methodologies (where disclosed), diversifying sources of data where possible, and using qualitative information and judgment as needed to fill in the gaps.

Until regulations and standards can provide meaningful solutions, investors should not be deterred from using climate-related data. Instead, investors must (1) use their judgment to make effective use of the data available to them and (2) be conscious of the limitations of those data. To help improve the current state of climate-related data, investors can participate in standards-setting processes, encourage issuers to voluntarily adopt standards, and advocate for high-quality, globally consistent disclosure regulations.

¹¹CFA Institute (2023) highlighted this issue in its comment letter to the ISSB on its agenda consultation: <https://rpc.cfainstitute.org/policy/comment-letters/2020-2024/issb-agenda-consultation>.

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