T. Rowe Price

As climate risks intensify, investment analysis must rise to the challenge

In the Spotlight
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Any successful asset manager needs to identify and analyze large systemic changes and the corresponding risks and opportunities they could bring. These types of changes are often driven by technological advances and/or regulation. We believe climate change represents a large systemic change set to have a material impact on investment performance across geographies and asset classes. Given the complexity of climate change dynamics, blending them into investment decision-making requires not just the capacity to derive the data and insights, but also the systems and processes to integrate them into the analysis.

At T. Rowe Price Associates, Inc., our approach combines fundamental analysis (by analysts and portfolio managers), thematic and topical research (by in-house environmental, social, and governance (ESG) specialist teams), and our proprietary Responsible Investing Indicator Model (RIIM) analysis—which includes an assessment of issuers' net zero status. It also integrates appropriate stewardship measures that seek to align with clients' investment objectives.

Given its materiality to investment performance, climate factors and their level of materiality are considered across our investment platform; however, the investment implications can vary depending on the client's mandate. Most of our clients have given us a mandate to deliver financial performance—in these cases, consideration of climate factors is for the purpose of delivering better financial performance. This requires insights into how corporate and other issuers may perform under a variety of climate-related scenarios, ranging from adherence to evolving regulatory demands to their capacity to conduct business in a changing environment. More specifically, this might include how they plan an orderly transition to net zero or how they are preparing for a hotter world where physical adaptation of business activities becomes necessary.

At the other end of the spectrum, a small but growing number of clients have dual mandates that include specific sustainable objectives alongside financial performance. Their sustainable objectives might include meeting net zero or greenhouse gas (GHG) reduction targets, excluding securities linked to fossil fuel production, or voting decisions that are not predominantly driven by financial materiality. In these cases, the analysis of climate factors will be the same, but the strategy may take a different approach to stewardship and divestment.

In both cases, our analysis of climate factors is benchmarked against a 1.5°C net zero pathway. To achieve this, the base case scenario implies a 50% reduction in greenhouse gas emissions by 2030 and achieving net zero by 2050. The pathway to net zero also must be science-based, which means that offsets can only be used for hard-to-abate emissions.

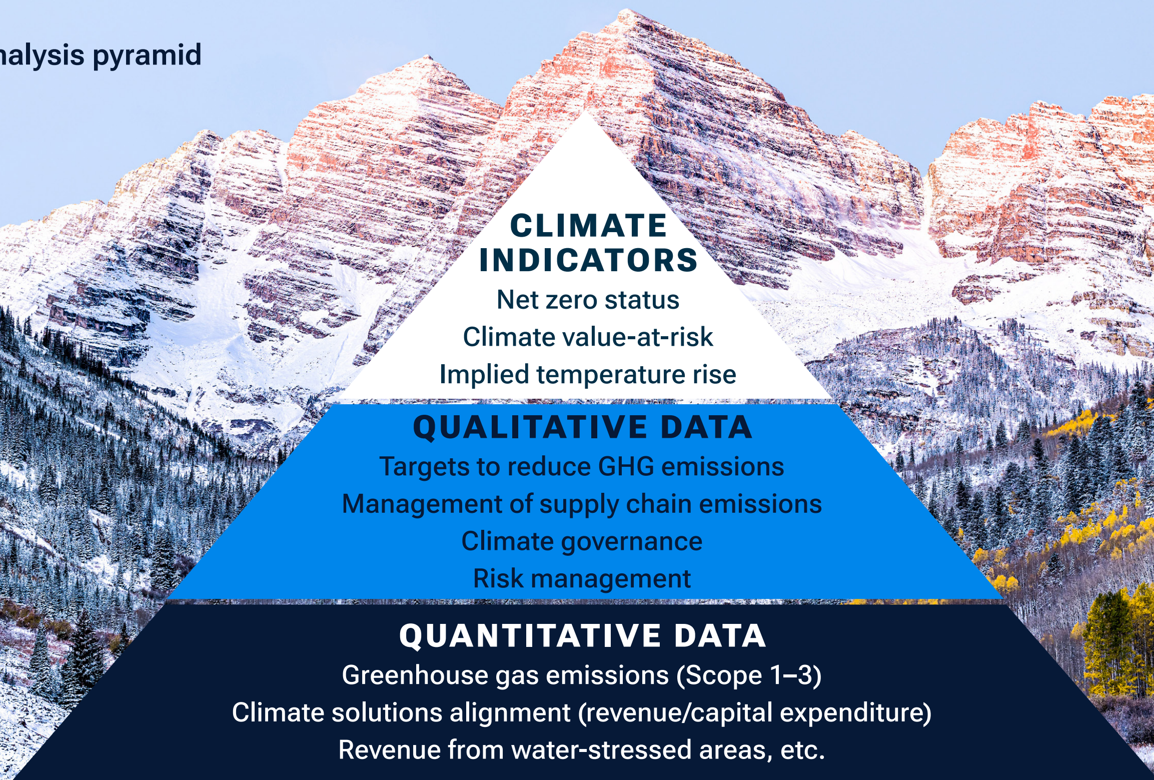
The challenge of quantifying climate

For many years, we have discussed data availability as a notable headwind to analyzing climate change-related risks and opportunities. The bottom line is that data remain lagged and underreported but have been improving steadily. To evaluate an issuer's climate change exposure, an investor needs a mix of quantitative and qualitative inputs. We believe that the Task Force on Climate-Related Financial Disclosures (TCFD) reporting standard captures the required information very comprehensively, which is why we have long advocated that our investee companies adopt this reporting standard. TCFD standards have now been absorbed by the new International Sustainability Standards Board that is gaining support from regulators around the world.

One of the most critical data inputs for climate analysis is the greenhouse gas emissions footprint of an issuer. While other data inputs are also very relevant and important, we believe that most investors view reporting of Scope 1–3 greenhouse gas emissions as the base of the climate analysis pyramid (see Chart 1). As the reporting of climate scenario metrics across portfolios is starting to become more common, we feel it is important that the end investor (i.e., our clients) understands the robustness of the underlying data. As such, we have provided a snapshot of greenhouse gas emissions data availability for the MSCI World Index, a developed market benchmark that spans geographies.

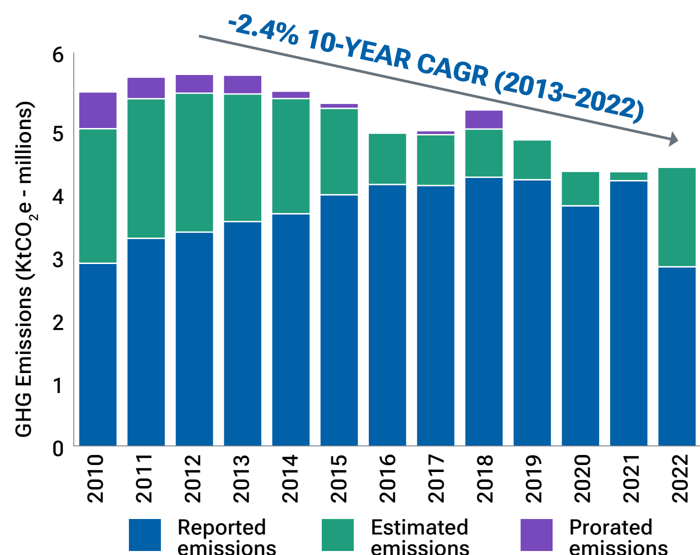
Scope 1 and 2 represent the direct GHG emissions of a company. Reporting of these emissions is pretty good for the companies within the MSCI World Index. For 2021, 85% of MSCI World Index constituents reported Scope 1 and 2 greenhouse gas emissions (compared with 52% five years prior). Furthermore, high emitters are more likely to report, as 94% of the MSCI World Index's constituents' aggregate emissions were reported in 2021. The drop seen in reported emissions in 2022 (see Chart 2) is a function of companies having not yet reported their year-end 2022 data. With more and more regulators starting to require greenhouse gas emissions disclosure, we expect to see continued improvement in the number of companies reporting, as well as in the timeliness of reporting.

Climate analysis pyramid
(Chart 1)



MSCI World Index total GHG

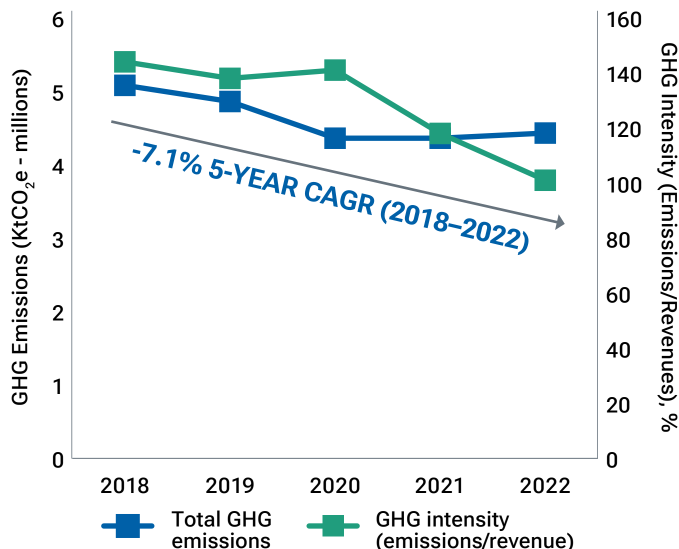
(Chart 2) Emissions—Scope 1–2



Source: Bloomberg Finance L.P. (time series includes current constituents of MSCI World Index). As of December 31, 2022. Investors cannot invest directly in an index. Please see Additional Disclosure for information about this MSCI index.

MSCI World Index total GHG

(Chart 3) Emissions vs. GHG intensity—Scope 1–2



Source: Bloomberg Finance L.P. (time series includes current constituents of MSCI World Index). As of December 31, 2022. Investors cannot invest directly in an index. Please see Additional Disclosure for information about this MSCI index.

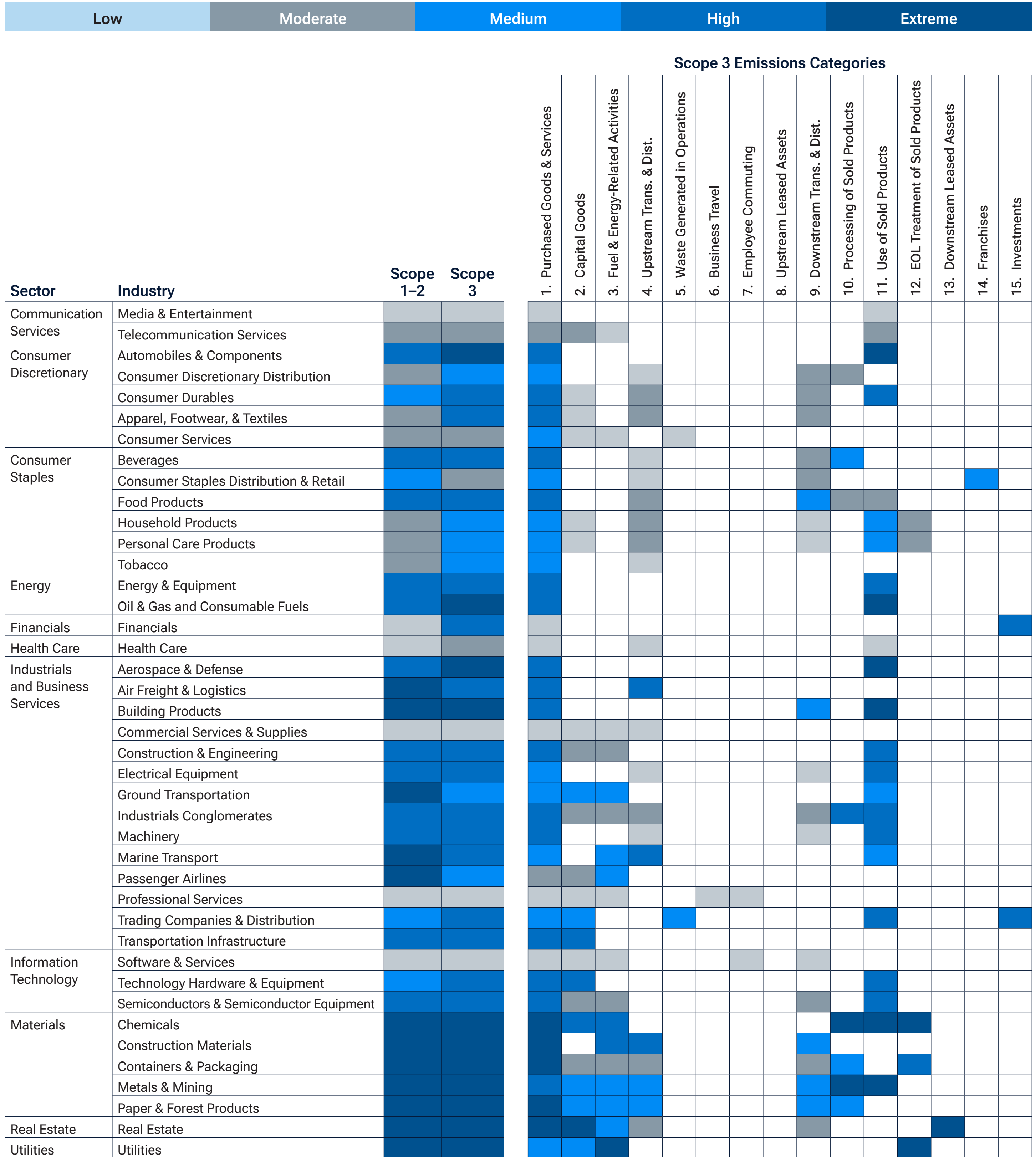
Chart 2 illustrates the aggregated GHG emissions of the current constituents of the MSCI World Index (there is no adjustment for benchmark weight). Over the past 10 years, absolute aggregated Scope 1 and 2 emissions have fallen by 2.4% CAGR,[1] well short of the 7% per annum decline required to be in line with a 1.5°C pathway. However, when evaluating the MSCI World Index on an intensity basis[2] using a weighted average approach, we see a decline of 7.1% CAGR over the past five years (Chart 3).

The data picture is very different when it comes to Scope 3 emissions. As these are the emissions that are not under the company's direct control, they are more complex to measure and comprise 15 different categories—not all of which will be material to a particular issuer. Measurement typically relies on estimating standards and tools developed by organizations such as the Greenhouse Gas Protocol. These standards guide companies to put the most effort into accurately estimating the Scope 3 categories that are most relevant for their business and to use broader estimates for the other categories.[3] Our own analysis takes a similar approach, and where there are enough data to analyze Scope 3 emissions, we focus on the data for the specific emissions categories deemed most relevant for each industry. Chart 4 illustrates the various categories, with the darker shading representing the categories deemed most material for each industry.

[1] CAGR = Compound annual growth rate. It represents the consistent rate of growth had the indicator compounded at the same rate each year over the previous 10-year period.
[2] This calculation refers to weighted average carbon intensity and applies the benchmark weighted average for greenhouse gas emissions/revenues.
[3] The Greenhouse Gas Protocol recommends that a company should focus on which Scope 3 activities are expected to generate the most significant emissions and offer the most significant GHG reduction opportunities and are the most relevant to the company's business goals. As a first step, companies should conduct a screening process using less specific data (i.e., industry average data). Next, each category should be examined to determine whether to further refine the emissions estimates.

Scope 1–3 emissions materiality assessment by sector

(Chart 4)



Analysis by T. Rowe Price as at March 2023. For illustrative purposes only.

Percent of companies in MSCI World Index reporting Scope 3 emissions by source
(Chart 5)

Only 1.7% of companies report all 15 sources of Scope 3 emissions, which means that any portfolio-level analysis including Scope 3 emissions must rely on estimated data.

Source: Bloomberg Finance L.P. Data reflect MSCI World Index constituents' emissions for 2021. Investors cannot invest directly in an index. Please see Additional Disclosure for information about this MSCI index.

Criteria for issuer net zero targets
(Chart 6)

	Scope 1–2		Scope 1–3	
Criteria	**Score**	**Target**	**Score**	**Target**
Net zero target (2050 or earlier)	100	Company has a 2040 net zero target in place.	100	Company has a 2040 net zero target in place.
Medium-term GHG reduction target	50	Lacks explicit medium-term target for GHG emissions but has a target to make 50% of its shipments net zero by 2030.	0	Lacks medium-term target for Scope 3 GHG emissions.
Short-term GHG reduction target	50	Lacks explicit short-term target for GHG emissions but has targets to power 100% of its operations with renewables by 2025. (Target was advanced from original date of 2030.)	0	Lacks short-term target for Scope 3 GHG emissions.
Credible pathway to achieve targets	50	Company is making strong progress on "indicators" to achieving GHG reduction (e.g., renewable energy use, green logistics, etc.).	75	Company has encouraged its suppliers to publicly sign on to a 2040 net zero pledge.
SBTi-certified targets[4]	0	In 2020, company submitted its target to SBTi; however, in our last engagement, company indicated that it was "far away" from reaching agreement.	0	In 2020, company submitted its target to SBTi; however, in our last engagement, company indicated that it was "far away" from reaching agreement.
Net zero pathway performance	50	Company has reported GHG emissions for 2018–2021. Intensity figures are declining for Scope 1–2, but not in line with Paris trajectory. Additionally, company has made substantial progress on shifting toward renewable energy.	50	Company has reported GHG emissions for 2018–2021. Intensity figures have declined for Scope 1–3, but not in line with Paris trajectory.
Net zero realized	—		—	
Net zero status	COMMITTED		NOT ALIGNED	

Achieved Net Zero | Aligned | Aligning | Committed | Not Aligned

Proprietary net zero analysis as of March 2023. The T. Rowe Price Associates Responsible Investing team uses an internal scoring system in 25-point increments from 0 to 100, with 0 being the worst and 100 being the best. For illustrative purposes only.

Evaluating net zero pathways

In assessing a company's net zero status, we view best practice as adopting a science-based net zero target, aligned to a 1.5°C pathway that covers Scope 1–2 and the most relevant Scope 3 emissions. If a company has these targets validated by the Science Based Targets initiative (SBTi),[4] it gives us confidence that it is adequately addressing its material emissions—not simply relying on carbon offsets (balancing actual emissions by investing in projects that reduce or store carbon elsewhere) when emissions should, in fact, be mitigated.

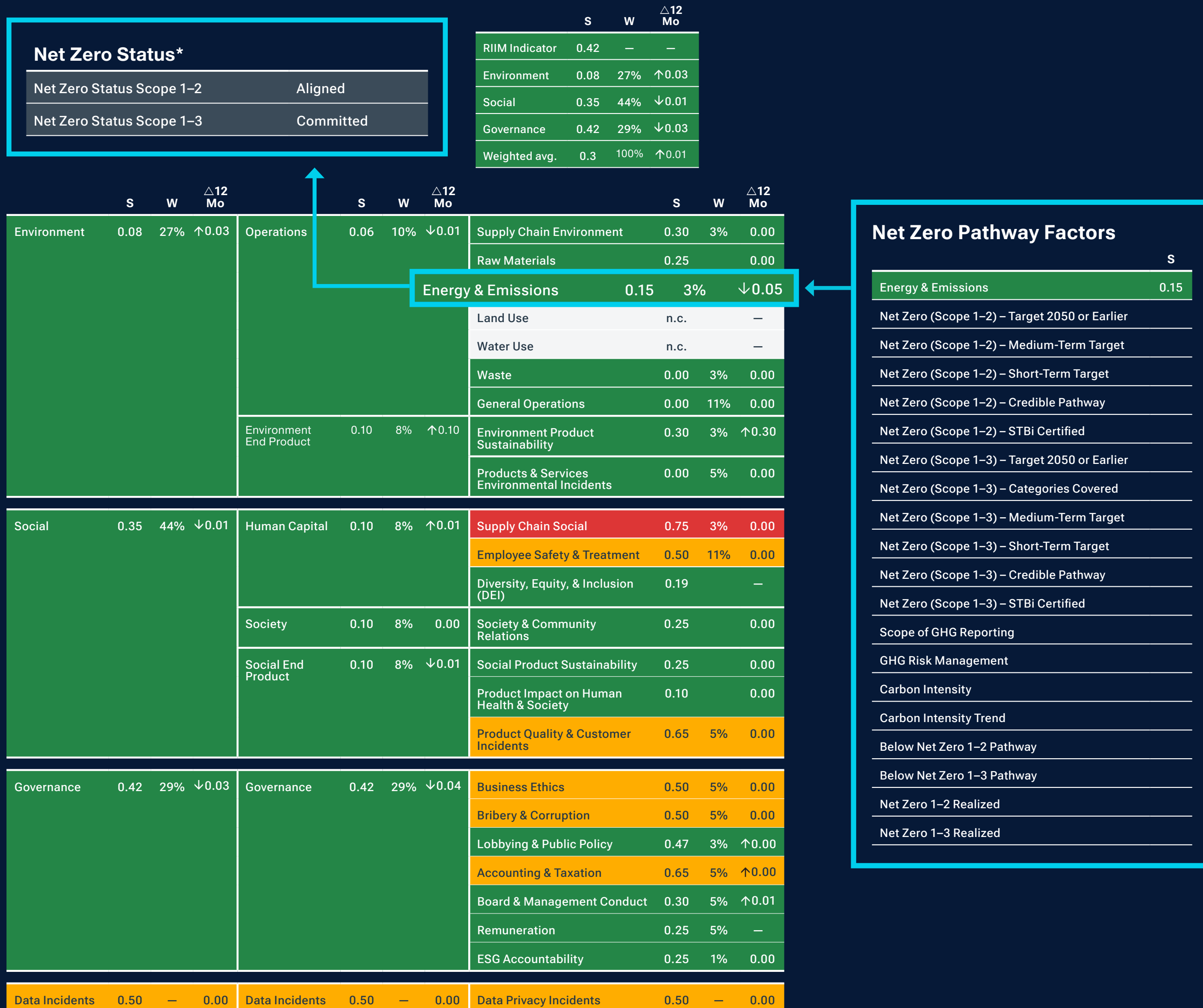
[4] The SBTi is a partnership between the Carbon Disclosure Project (CDP), the World Resources Institute (WRI), the World Wide Fund for Nature (WWF), and the United Nations Global Compact. It provides companies with a clearly defined pathway to future-proof growth by specifying how much and how quickly they need to reduce their greenhouse gas emissions.

Our net zero analysis goes beyond simply identifying whether a company has a net zero target in place; it also includes a company's short- and medium-term GHG reduction targets and a view on the credibility of its emissions trajectory. It is underpinned by the principles established by the Paris Aligned Investment Initiative Net Zero Framework. The range of targets and pathway factors we look to quantify are illustrated in Chart 6. According to our scoring system, the company in this illustration is assessed as being "committed" in its journey toward net zero for Scope 1–2, but is "not aligned" when taking into consideration Scope 3 emissions. Higher gradings are possible depending on the extent to which a company has either achieved net zero or the degree to which its emissions targets are aligned to that objective.

Our analysis culminates in a net zero profile for each issuer, providing essential climate information for our investment analysts and portfolio managers to evaluate. A sample profile and data inputs are illustrated in Chart 7.

Illustrative net zero profile and data inputs

(Chart 7)



Source: T. Rowe Price as at March 2023. For illustrative purposes only. Green indicates no/few flags, orange indicates medium flags, and red indicates high flags.
S=Score; W=Weight; Δ12 Mo=12-Month change.
*Scope 1 (direct emissions from owned or controlled sources); Scope 2 (indirect emissions from the generation of purchased electricity, steam, or cooling); Scope 3 (all other indirect emissions).

Conclusion

Ultimately, the imperative to embed analysis of climate-related data into investment decision-making continues to intensify. The systemic challenge posed by climate change means that we need to understand and evaluate the financial risks and opportunities it creates for the issuers we may invest in on behalf of our clients. For some clients, the requirement goes beyond the need to achieve financial performance, as they target distinct sustainability objectives that govern how we construct and manage their portfolio. And while the challenges around climate data are not insignificant, the good news is that there is progress, and our platform has robust systems and processes in place to accommodate it.

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