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## Climate Solutions – Global

# Transition Risk and Opportunities for Asset Managers: Forward-looking metrics enhance investment strategies

## Summary

The shift to a low-carbon economy will lead to significant changes for many industries, presenting new risks, known as transition risks, as well as opportunities. In our previous report, [Transition Risk and Opportunities for Asset Managers: Greenhouse Gas Emissions Provide an Important Baseline](#), we explain the pathways through which the transition presents financial risks, and also highlight how greenhouse gas (GHG) emissions provide a starting point for identifying related risks and opportunities.

Asset managers also need to understand how an investment will pay off in the short or long-term, which requires forward-looking metrics to provide insight on the gap between historical and future company performance. Two high-emitting companies can face very different transition risks based on how they've prepared their business model for the transition to the low-carbon economy.

Temperature alignment data, which associates a security or portfolio with a particular climate pathway or implied global warming outcome, provides a tool for asset managers to manage risk associated with high GHG emitters. It also allows them to take this a step further to intentionally align investment portfolios with temperature targets. In our universe of companies assessed on temperature alignment goals, sectors such as luxury goods, travel & tourism and chemicals have the largest proportion of their companies publishing targets without sufficient detail to extrapolate a temperature alignment, with 52%, 48% and 47% of their companies falling into this category respectively. Of course there is no single set pathway to a particular climate outcome. So while these datasets include some simplifications, they still provide a useful indication of a company's trajectory.

The transition to a low-carbon economy also presents opportunities for companies and their investors. Asset managers can identify companies offering products or services that are likely to be in increasing demand, such as manufacturers of equipment related to renewable energy. Data on how companies align with the climate mitigation part of the EU Taxonomy offers rich and multilayered information, including alignment with social standards.

Within the eight highest GHG-emitting sectors in our dataset, the electric & gas utilities sector has the greatest proportion of companies that are Taxonomy-aligned (61%), while the energy sector, including companies involved in exploration, management, and production of energy producing resources, has the lowest (6%). The electric & gas utilities sector includes high-carbon generators that have an opportunity to transition to low-carbon operations through low-carbon energy purchasing and transmission, as well as renewable energy companies that generate revenue from technologies and power generation aimed at climate change mitigation.

## Forward-looking datasets complement GHG data to provide a fuller picture of risk and opportunity

The shift to a low-carbon economy will lead to significant changes for many industries, presenting new risks, known as transition risks, as well as opportunities. In our previous report, [Transition Risk and Opportunities for Asset Managers: Greenhouse Gas Emissions Provide an Important Baseline](#), we explain the pathways through which the transition presents financial risks, and also highlight how greenhouse gas (GHG) emissions provide a starting point for identifying related risks and opportunities. There is often a correlation between high GHG emissions and company exposure to the regulatory, market and technological impacts of the transition. Accordingly, related techniques can be used to both understand potential downside (or upside) from a financial point of view for certain companies related to the transition, and to proactively align portfolios with the transition for other purposes, such as improving an investor's reputation or fulfilling climate commitments. To manage their risk and to align with net zero by 2050, [asset managers are leveraging a multitude of tools](#) based on the GHG emissions of their portfolio companies, including reweighting, screening, divesting, climate-focused voting and engagement. Historical GHG emissions are important to understand trends to date but investors also need to understand how an investment will pay off in the short- or long-term, which requires [forward-looking metrics to provide insight on the gap between historical and future company performance](#).

The use of forward-looking metrics can also provide context on companies' current and planned strategies related to the transition and the likelihood of any historical decarbonization trends continuing. In this way they serve to complement historical data on GHG emissions. To truly understand how a company's GHG emissions may influence its transition risk, it is essential to understand the trajectory of those emissions and how the company is (or is not) reducing them. Another facet of how a company will fare in the transition is whether or not it is positioned to benefit through products and services that will be in increased demand due to the shift to a low-carbon and climate-resilient economy. Together, understanding both a company's decarbonization trend and the contribution of its offerings to the transition allows investors to create strategies based on the multiple angles through which transition risks and opportunities might be relevant for the firm. This report explores several forward-looking and opportunity-focused metrics, providing examples of how they work together to inform investment strategy.

## Temperature alignment unpacks the implications of net zero pledges

In 2020 and 2021 a multitude of companies and financial institutions [pledged to reach net zero carbon emissions by 2050](#). Corporate net zero pledges provide one indication of how a company is preparing for the transition. However, an investor needs to understand the intermediate steps required by such a commitment and the implication for a company's business, to truly inform investment strategies. Understanding the pathway to net zero matters for several reasons, including the fact that it is the cumulative amount of emissions that drives global warming and that the target framing incorporates information about a company's approach to transition in terms of anticipated changes to its business model.

One type of forward-looking dataset that builds upon GHG emissions data to improve the transparency of net zero commitments is data that assesses the temperature alignment of equities within a portfolio. [Temperature alignment is the practice of associating a security or portfolio with a particular climate pathway or implied global warming outcome](#).

Temperature alignment datasets offer a relatively simple way to boil a complex set of variables down to a single metric that intuitively describes the degree of warming that a given company would be consistent with if it implements certain actions or continues business as usual. The use of temperature alignment data is instrumental in providing a comparable view of carbon intensive and non-carbon intensive sectors on their path to net zero by 2050. These datasets are not without limitations; for example, there is no single set pathway to a particular climate outcome, and any single emissions pathway will have a probabilistic range of different potential associated temperature outcomes rather than one certain level of warming. However, despite these simplifications, temperature alignment datasets still provide an important indicator of a company's trajectory. To meaningfully leverage the data it is essential to understand the underlying assumptions of any temperature alignment methodology as this will inform its findings.

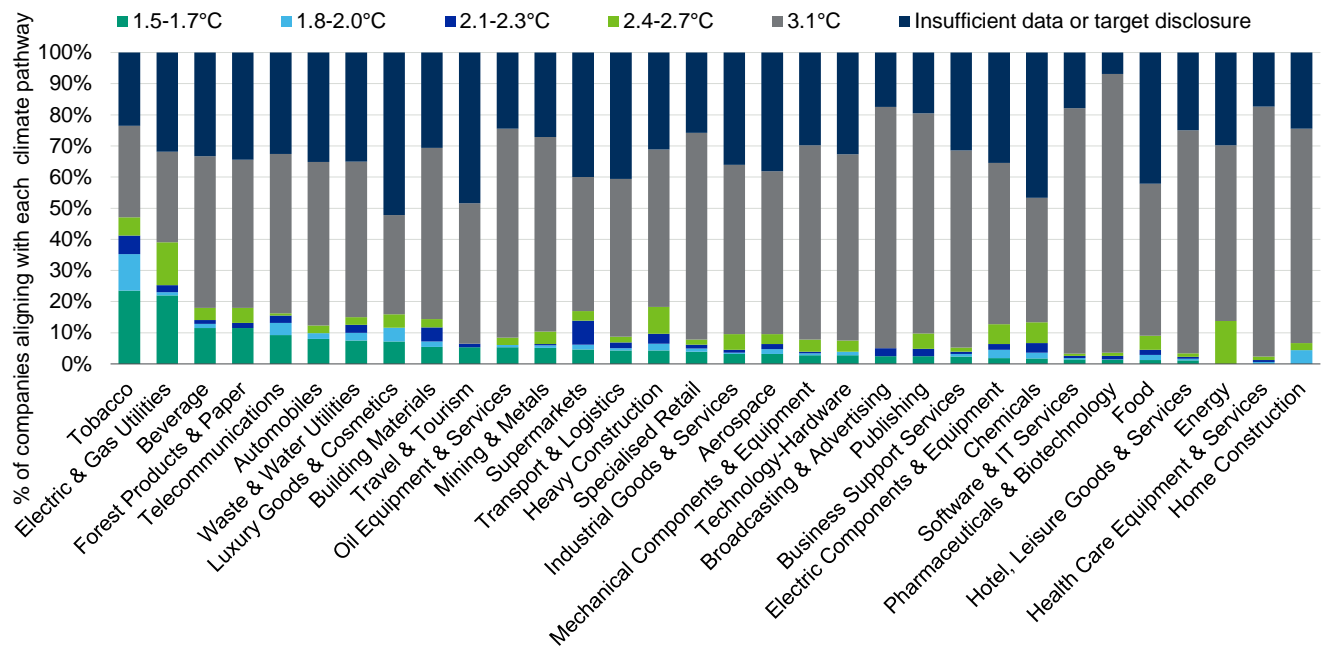
We explore Moody's [Temperature Alignment dataset](#) to provide examples of how investors can use this type of data to inform their decision-making. This dataset is based on the ambition of companies' stated emissions reductions targets. It provides temperature alignment estimates for companies with targets that are quantifiable in terms of the levels of GHG reduction and provides two estimates for each company – one based on the period extending to 2030 (if the company's target extends that far) and one based on the specific period covered by each company's target, which may be shorter or longer than 2030. For this analysis we only use the figures based on the period to 2030 as it provides the best comparability across a universe of companies with different targets. [Companies that haven't set a target are given a default temperature alignment of 3.1°C, being assumed to](#)

[be broadly representative of a 'current policies' world where there is no further action on climate](#). Overall 9% of the nearly 5,800<sup>1</sup> companies in our assessment universe have set targets that can be quantified using our framework and which run to 2030 or beyond. This demonstrates that despite the increase in net zero commitments there is still a significant gap in quantitative disclosure by companies on their plans to implement such commitments. Therefore the average implied temperature outcome of the overall universe is heavily weighted towards the business-as-usual behavior of those companies that haven't set targets.

Globally, just 2% of companies in our assessed universe are aligned with 1.5°C warming, or a future of net zero by 2050, with a further 2% above this level but still below 2°C.<sup>2</sup> Even among those companies that have set quantifiable targets, the average implied temperature rise is 2.1°C, while among all assessed companies it is 2.9°C, based on a simple average.<sup>3</sup> This indicates the need for increased ambition, alongside pledges related to net zero. This understanding is important for informing investors' engagement strategies.

### Temperature Alignment Trends Inform Investment Strategy and Engagement

Figure 1 Distribution of sectoral alignment with key climate pathways



Source: Moody's

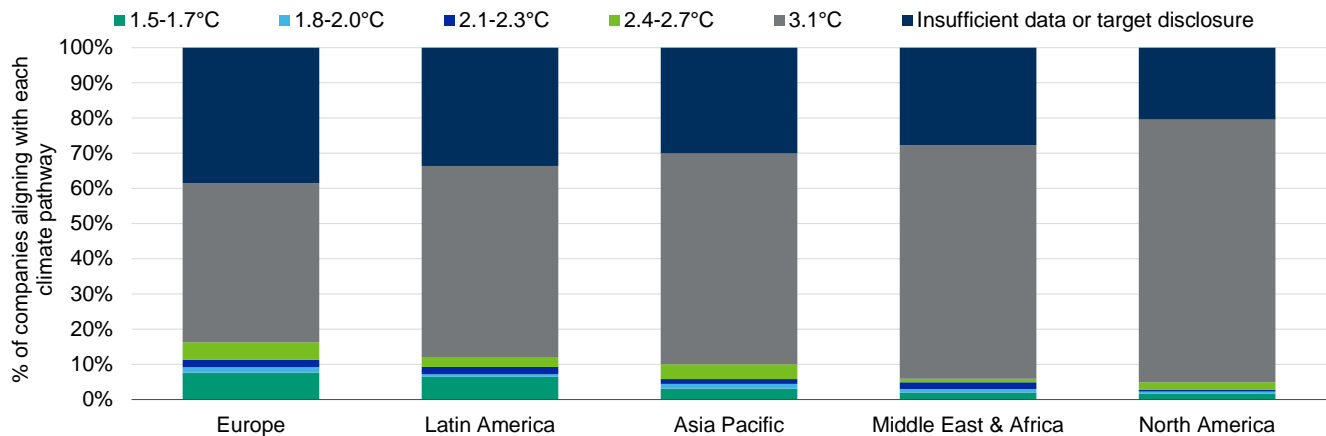
Understanding sector-level trends can complement an investor's existing understanding of different industries and prioritization within the portfolio. In our universe, sectors such as luxury goods, travel & tourism and chemicals have the largest proportion of their companies publishing targets without sufficient detail to extrapolate a temperature alignment pathway, with 52%, 48% and 47% of their companies falling into this category respectively. On the other hand, the pharmaceuticals & biotechnology sector has the largest percentage of companies not setting targets, with 90% receiving an implied temperature rise of 3.1°C rise due to a lack of targets. The [pharmaceuticals industry's total scope 3 emissions are estimated to be nearly five times larger than the total emissions directly controlled by companies in the industry](#). However, poor disclosure and GHG accounting infrastructure make it challenging to assess a pharmaceutical company's indirect emissions and for companies to set realistic carbon emission reduction targets without widespread disclosure of emissions across their value chain. Likewise, this is not an industry that has received much attention around reducing its GHG emissions to date, which may contribute to its poor performance in terms of quantifiable targets.

<sup>1</sup> Since the time of our analysis the universe has expanded to 6,800 companies and coverage will continue to increase.  
<sup>2</sup> Here assumed to be 1.65°C, the temperature outcome associated with the International Energy Agency's Sustainable Development Scenario (with a 50% probability of limiting temperature rises to this level).  
<sup>3</sup> Throughout the report aggregate figures are based on a simple average.

On the other hand, top-performing sectors with the most companies aligning to a 1.5°C temperature rise include tobacco with 24%, and electric & gas utilities with 18% of their assessed companies aligned with 1.5°C. With only 17 assessed companies in the tobacco sector, this is a very [concentrated industry](#) and our universe includes the majority of the market share, so this finding is likely representative of the whole industry's ambition. The electric & gas utilities sector does have a majority of its companies setting quantifiable targets. However, this relatively high alignment with 1.5°C is also partially driven by the presence of “pure play” renewable energy companies, which receive an implied temperature rise of 1.5°C regardless of whether or not they have set targets. This is due to their assumed significant contribution to the low-carbon economy given the nature of their business.

While this data does not capture the likelihood of companies reaching their net zero targets as it is based solely on their implied temperature rise if they meet their emissions reductions targets, the insight into companies' ambition provides an important starting point. Our dataset also includes details of the full targets and underlying data which enables a user to make their own assessment on how vague or meaningful a target may be. At a high level this can inform tilting strategies or provide a starting point for which sectors to prioritize for targeted engagement. By homing in on company level analysis investors can use this data to complement data on GHG emissions and determine which companies are likely the highest performers in planning their decarbonization within overall poorly performing industries. This can help with balancing a portfolio, particularly when screening out entire sectors is not a desired approach.

**Figure 2** Distribution of regional alignment with key climate pathways



Source: Moody's

In our previous report on GHG emissions we identified sectors with the highest total GHG emissions. In this report, we assess the performance of the eight highest-emitting industries based on their temperature alignment outcome by region. These sectors include energy, mining & metals, automobiles, electric & gas utilities, aerospace, industrial goods & services, building materials, and chemicals. When a sector is starting with a greater proportion of the total global annual emissions, their targets may face both particular challenges and scrutiny. However, we find that a significant number of companies in these sectors in each region are either not disclosing emissions reduction targets or they are insufficient to be quantified. The majority of North American companies in these sectors (75%) do not provide targets and are thus assigned a 3.1°C temperature alignment. On the other hand, Europe has the lowest share of companies in this category with only 45%. Across these high-emitting industries Europe's average temperature alignment is about 2.7°C, and Latin America's is 2.8°C, which are below the average temperature alignment across all regions which is 2.9°C. Asia Pacific, Middle East and Africa, and North America, all show temperature alignments of roughly 2.9°C.<sup>4</sup> While Europe has the lowest average temperature alignment across high emitting sectors, likely driven by its advanced progress on mandating climate risk disclosure, the fact that all regions are above the 1.5°C aspiration shows that there is substantial need for more progress.

Temperature alignment data provides a rich and layered tool for asset managers to manage risk associated with high GHG emitters, but also to take this a step further to intentionally align investment portfolios with temperature targets. It also complements the information on highly exposed companies provided by GHG datasets. Two high GHG emitters may face very different risks in the future based on how they are preparing to transition their business models and technology. Another element

<sup>4</sup> The three lowest performing regions have the same temperature alignment as the global average due to rounding.

of preparing for the transition to a low-carbon economy is identifying opportunities that may emerge from the transition. Investors can couple data on risk management with datasets on which companies are acting on business opportunities from the transition, to further nuance their understanding of companies' positioning.

### Integrating Climate into Risk Management

In addition to the datasets discussed in this report there has recently been significant progress on integrating climate change data into traditional financial risk management datasets, including climate-adjusted probability of default models and macroeconomic scenarios. Here we highlight two such datasets alongside further reading on the topic.

**Climate-adjusted probability of default models:** Asset managers can leverage data that integrates both physical and transition risk into climate-adjusted probability of default models built on the Public Firm EDF™ model. By extending forward 30 years and incorporating four Network for Greening the Financial System (NGFS)-aligned scenarios, this data provides a forward-looking view of how climate risk may translate into credit risk for companies, based on impacts on the underlying drivers of equity value, asset volatility and liability value. For more information see: ["Assessing the Credit Impact of Climate Risk for Corporates,"](#) a Moody's Analytics whitepaper.

**Climate macroeconomic scenarios:** Asset managers can also explore macroeconomic impacts to inform their regional strategy, by leveraging macroeconomic scenarios that combine physical and transition data with macroeconomic data to produce dozens of macrofinancial variables aligned with the NGFS scenarios. These produce quarterly outputs and can be run through 2100 to offer a wealth of data that complements company specific datasets. For more information see: ["Climate Risk Macroeconomic Forecasting,"](#) a Moody's Analytics whitepaper.

## European Union (EU) Taxonomy alignment data provides insights on opportunities

### EU Taxonomy Alignment Dataset – The Framework

The EU Taxonomy (Taxonomy) is an [EU-wide classification system for environmentally sustainable activities](#). It is intended to provide businesses and investors with a common language to identify economic activities that are considered environmentally sustainable. Having entered into force in July 2020, [the Taxonomy is an important part of the EU's sustainable finance strategy](#), which sets out the Commission's approach to supporting the EU Green Deal and the continent's ambitions to [achieve net zero emissions by 2050](#). The Taxonomy outlines six environmental objectives, including climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, circular economy, pollution, and biodiversity and ecosystems. So far it includes individual economic activities and associated technical screening criteria to determine eligibility for the climate change mitigation and climate change adaptation objectives, with details on the other objectives still under development.

Identifying companies that provide products or services (referred to as "activities" by the Taxonomy) that are *aligned* to the Taxonomy, enables investors to explicitly integrate opportunities into their strategies. In the following, we show findings from [Moody's EU Taxonomy](#) dataset to provide examples of how it can be used by investors to identify investment opportunities related to the transition to a low-carbon economy.

*Eligible* activities are economic activities outlined in the Taxonomy that can contribute to one of the six environmental objectives and are then categorized as 'green,' 'transitional,' or 'enabling' as defined in the Taxonomy. 'Green' activities are those that reduce GHG emissions or build the company's resilience to physical risks. 'Transitional' activities are those from legacy carbon-intensive operations where the company has implemented a more efficient process that emits less, or is a best-in-class efficient process such as hybrid or electric propulsion system for aircrafts. 'Enabling' activities provide products or services that other companies purchase to become more efficient or resilient, such as technology for hybrid and electric cars.

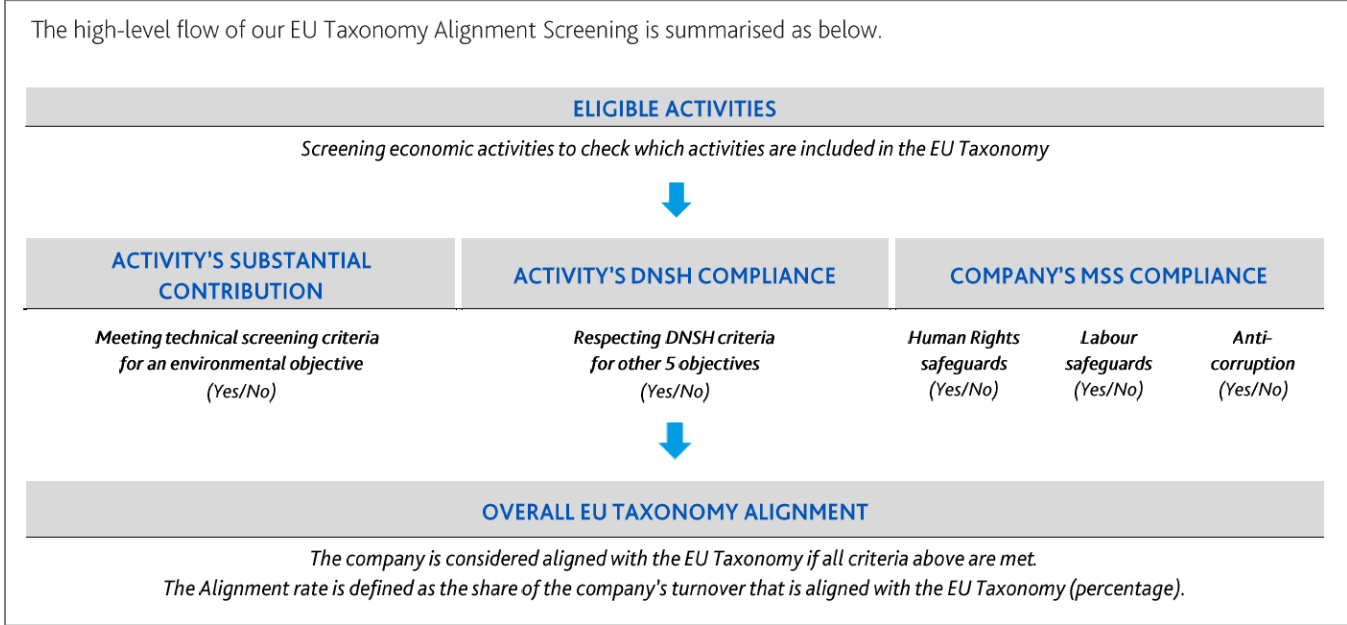
Before an activity can qualify as *aligned* with the Taxonomy, one must determine that it makes substantial contribution by meeting the Taxonomy's technical screening criteria (TSC). The activity must also meet the "Do No Significant Harm" (DNSH) principle, meaning it does not significantly compromise any of the six environmental objectives.

As shown in Figure 3 below, a company is considered *aligned* with the EU Taxonomy if at least one of its activities meets the substantial contribution criteria, if it respects the DNSH principles, and meets the Minimum Social Safeguards (MSS): 1) Human



Rights Safeguards 2) Labor Safeguards and 3) Anti-corruption. In Moody's EU Taxonomy Alignment dataset, we determine if a company meets the MSS criteria based on a controversy risk assessment. The assessment considers the company's exposure to and management of controversies based on daily monitoring of public sources to identify potential controversies and impacts on stakeholders.

Figure 3 Flow of Moody's EU Taxonomy Alignment Screening

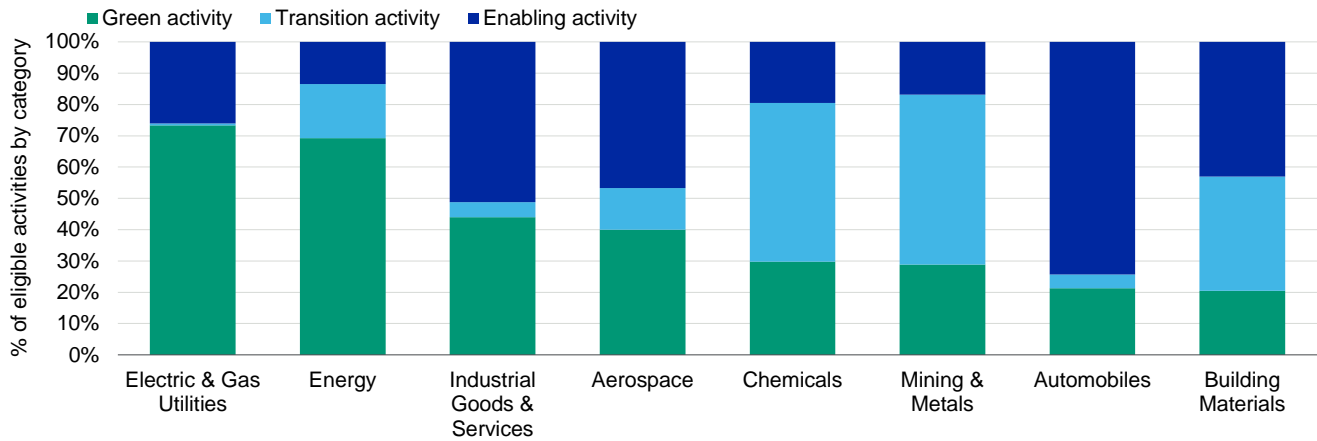


Source: Moody's.

Eligible Activities – An Entry Point

Companies in sectors with high absolute GHG emissions can still derive value from technologies and activities that promote the Taxonomy environmental objectives.

Figure 4 Distribution of EU Taxonomy eligible economic activities by category in each sector. The chart includes the sectors with the highest absolute emissions (Scope 1-3)



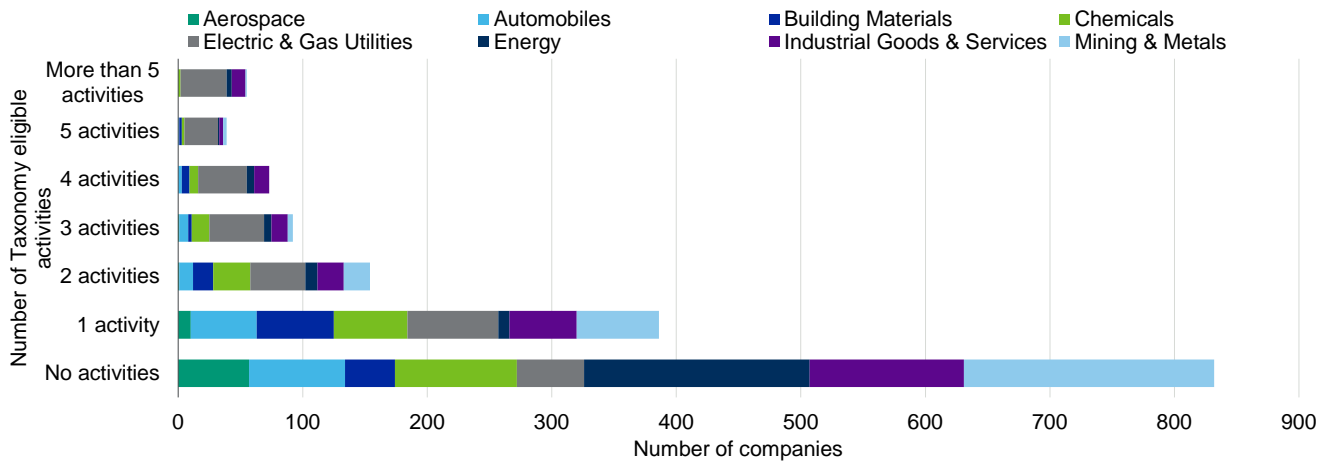
Source: Moody's

Categorizing economic activities into the three categories – green, transitional, enabling – allows investors to take a more granular look at how companies' products and services are contributing to the transition to a low-carbon and climate-resilient economy. For example, the automotive sector has the highest share of "enabling" activities within the eight highest emitting sectors, but the

second lowest share of “green” activities. 74% of the automobile industry’s *eligible* activities are “enabling” while only 21% are “green.” This indicates that while many companies in the automobile sector may be making significant progress in identifying and acting upon business opportunities presented by the need to transition, they may need to increase their efforts on improving their own operations alongside their business models.

The mining & metals and chemicals sectors, on the other hand, have the highest share of “transitional” activities, which indicates that they may hold higher transition risk in the near-term due to their carbon intensive activities and will likely face costs associated with converting their activities to “green,” despite already being eligible with the EU Taxonomy. The electric & gas utilities sector has the highest percentage of operational activities that are considered “green” under the Taxonomy, such as electricity generation from wind power. This includes activities of renewable energy companies as well as traditional thermal power utility companies that are diversifying their portfolios to include renewable energy as well. While we assessed the share of a sector’s activities being categorized under each type of activity to explore the relative contribution of each type of activity within an industry, a company or industry could be a leader across multiple categories in terms of number of activities.

**Figure 5** The eight sectors with highest absolute emissions (Scope 1-3) based on the number of their companies that have different numbers of eligible activities under the Taxonomy.



Source: Moody's

Companies in our universe had an average of only 0.62 *eligible* activities under the Taxonomy, with a maximum of 15 *eligible* activities, but most companies had zero *eligible* activities. Focusing on the eight sectors with the highest GHG emissions, a majority of companies do not have any activities that are EU Taxonomy *eligible* for climate change mitigation or adaptation. Even fewer companies have activities that are also *aligned* to the Taxonomy and are thus contributing to social priorities as well.

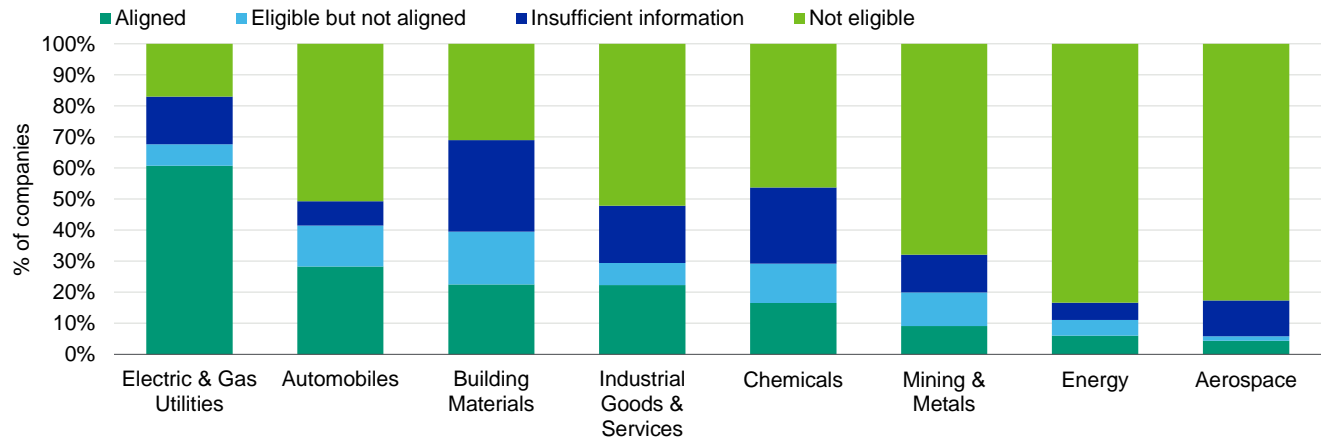
Identifying companies with *eligible* activities under the Taxonomy provides an indication of their progress on integrating climate change into their business strategies and operations which in itself can provide important insight for climate-focused investment strategies. By also factoring in information on company *alignment* with the Taxonomy, investors can complement their broader social or sustainability strategies.

### Aligned Activities – A Wholistic Approach

Within the eight highest-emitting sectors, the electric & gas utilities sector has the most companies that are Taxonomy *aligned* (61%), while the energy sector has the lowest proportion of companies aligned to the Taxonomy (6%). The electric & gas utilities sector includes high-carbon generators that have an opportunity to relatively easily transition to low-carbon operations, as well as renewable energy companies that generate revenue from technologies and power generation aimed at climate change mitigation, making this one of the industries with many opportunities from a transition. The energy sector primarily derives revenue from fossil fuel exploration, development, and sale, making it more challenging to identify climate-related opportunities in this industry. However, leaders in the energy sector that align to the Taxonomy derive revenue from research, development, and innovation for carbon capture and sequestration, diversified energy generation from renewables, and facilitating distribution of renewable energy through utility infrastructure. Exploring how companies in hard-to-abate sectors are identifying opportunities related to the

transition can both help investors identify top performers within these more exposed industries and also provide insight into engagement strategies and relevant opportunities for lower performing companies to improve.

Figure 6 Distribution of companies based on Taxonomy eligibility or alignment, by sector



Source: Moody's

Within the electric & gas utilities sector, ENGIE SA in France, Meridian Energy Ltd. in New Zealand, and Entergy Corp. in the United States are all *aligned* with the Taxonomy, having several *aligned* mitigation activities. Many of the *aligned* activities are classified as “green,” improving the company's own performance such as through renewable energy. ENGIE SA also takes part in installation, maintenance, and repair of electric vehicle charging stations, which is also a “green” activity since they operate the charging stations.

Data on companies' *eligible* and *aligned* activities under the Taxonomy provides multilayered insight on how companies are tangibly contributing to the low-carbon economy through their own operations or their products and services. By including the requirement to align with DNSH and MSS principles, the Taxonomy also provides insight for investment strategies aiming to address climate change alongside other social and environmental priorities.

## Conclusion

The transition to a low-carbon economy will affect businesses and in turn their investors, in multifaceted ways both positive and negative. These impacts are affected by regulation but also influenced by a range of other drivers including technological development and shifting consumer preferences. Investors will need to understand how their portfolios are positioned today as well as how they will change over time as the economy transitions, to best manage risk. An array of tools we presented here and in our previous report can assist investors to proactively adjust their portfolios in terms of transition risk management and to benefit from opportunities presented by the transition. As research continues on the best ways to quantify the likelihood of companies achieving their emissions reductions targets, multidimensional datasets capturing GHG emissions, projected temperature alignment of companies, and their contribution to the transition through their products, provide a range of tools to inform nuanced portfolio strategy, engagement and risk management.

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